

**SINUUM,
TANGENTIUM
, ET
SECANTIUM
CANON...**

Bartholomäus
Pitiscus, ...



NAZIONALE

13

24 N

12

VITT. EMANUELE

14.23.A.

~~Revisum~~
SIN V V M.
TANGENTIVM
ET SECANTIVM

Canon manualis,

Supputatus à B. P I R I S C O, & emen-
datus in hac Editione. in qua ad-
duntur omnia principia ac porne-
cessaria, quæ ad Trigonometriam
spectant, de prompta ex notandis
bus doctrina triangulorum tam
rectilineorum, quàm sphæricorum.

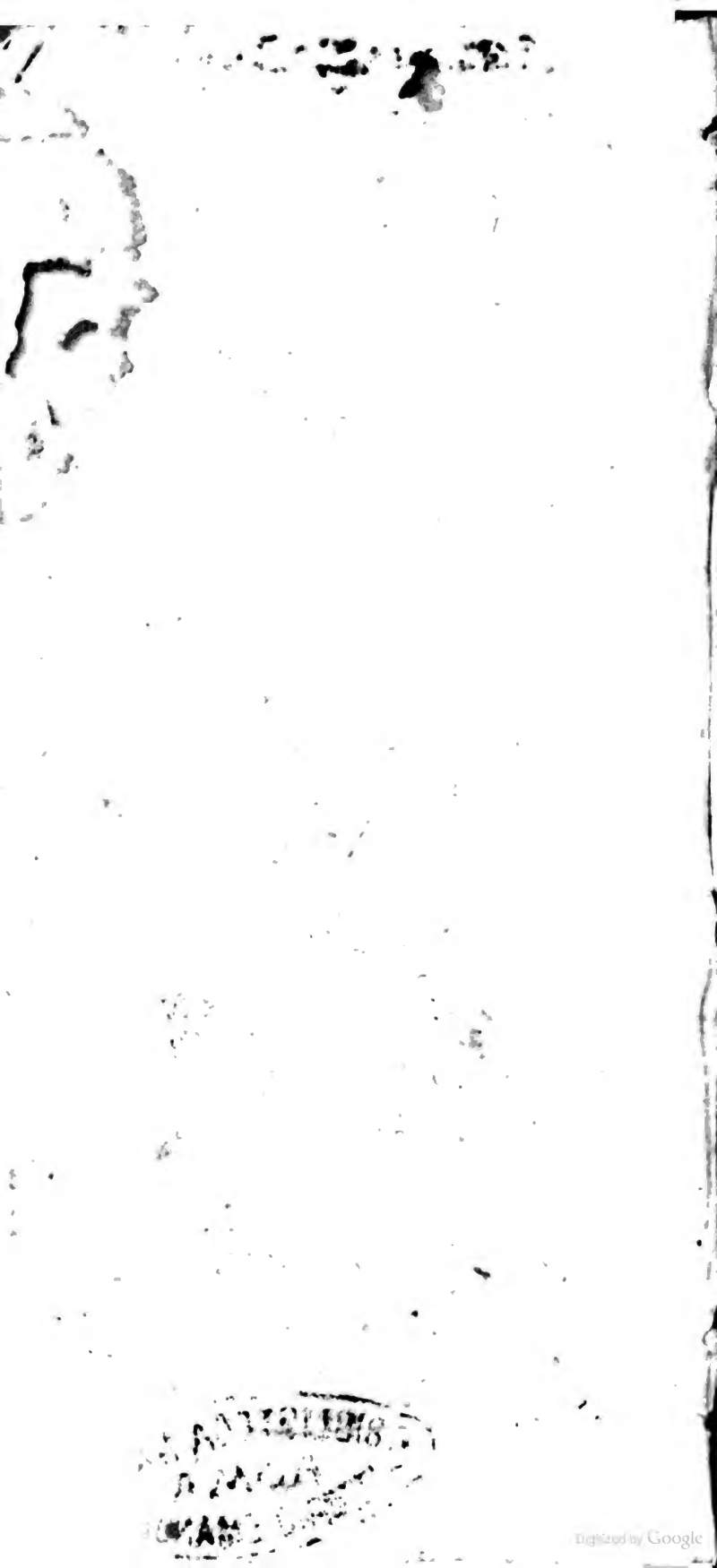
DESIDERII HENRIONI
Mathematicum Professoris



PARISIIS,
Apud Melchiorem Mondierem.

M. DC. XXIII.
CVM PRIVILEGIIS.

BIBLIOTHECA
ROMA
VITTORIO EMANUELE



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D. HENRION

A D L E C T O R E M.



VM hic Canon manualis Pitisci esset mirum in modum exoptatus à trigonometricæ amatoribus, tam ob auctorem, quam quia est breuissimus, & omnium Canonum latifacilissimus, Abraham Pacard Typographus in animum induxit ab hinc quatuor annis Canonem hunc iterum excudere; & quoniam multi querebantur eum mendis scaterere ac erroribus, qui in prima impressione irreperant, rogauit me ut eum ad incudem re-

A ij



uocarem ne tot erroribus scateret, & ut adderem aliquid ex eius Canonis usu, quæ quidem efflagitatio iuncta nostrorum amicorum & discipulorum studio, qui viderant aliquid simile, quod in usum meum redegeram, tantum valuit ut ad huius Canonis examen vehementiori cura & diligentia quam ante animum appulerim. Deinde quia hic manualis erat nudus, ita ut non posset prodesse nisi ijs qui memoria pollerent, & idcirco inutilis maneret multis qui memoriam habent non admodum tenacem, nec aptam ad seruandas omnes analogias necessarias ad doctrinam computationis triangulorum tam rectilineorum, quam sphericorum, ita ut non possent ijs uti cum opus esset, addidi ad finem Canonis, usum eius; &

deinde paucis perstrinxi aliquas
analogias ac proportiones sele-
ctas, necessarias supputationi
triangulorum rectilin. & post-
quam quibusdam exemplis,
analogias illas explicavi; ali-
quas etiam analogias necessa-
rias ad calculum & supputatio-
nem triangulorum sphærico-
rum attuli. Alijs vero analogijs
in nostris tractatibus triangu-
lorum demonstratis, non pu-
taui opus esse hunc libellum
augere; nec etiam operationi-
bus circini proportionis ad tri-
gonometriā spectantibus: quā-
do quidem ijs qui secuturi sunt
analogias à me allatas, eisque
exēpla adiuncta, non futurū sit
difficile omnem trigonome-
triam ad praxim reuocare be-
neficio eiusdem circini. Adde
quod si alicui curioso huius
operationis dubium aliquod

superesset, posset ei adimi refe-
renti se ad collectanea nostra
Mathematica, aut potius ad li-
bellum de usu illius circini pro-
portionis à nobis in lucem edi-
tum, aut ad nostrā Cosmogra-
phiam, & globorum, triangu-
lorumque sphaericorum tracta-
tus: Nam in his tribus poste-
rioribus libellis inueniet trian-
gula spherica amplissimè ex-
planata, & in duobus priori-
bus, triangula rectilinea. Hic
vero Canon manualis cum ef-
set typis mandatus ab eodem
Pacard; tanti æstimatus est vt
intra paucos dies libri omnes
empti fuerint, quod me impu-
lit vt eam iterum typis mandā-
dum curarem tã in lingua gal-
lica, quam Latina, vt extirpos-
sent esse participes fructus &
utilitatis illius Canonis, emen-
daris tamen erroribus, qui for-

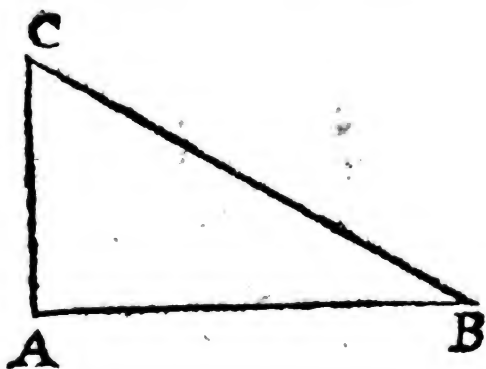
te à Typographis antea com-
mitti potuerunt, & additis qui-
busdam definitionibus, quas
existimaui pernecessarias ad in-
telligentiam trigonometriæ.
Hæc omnia sunt (candide le-
ctor) quæ arbitratus sum, huic
Canoni adiungenda esse ut uti-
lior redderetur quam antea ijs
qui doctrinæ triangulorum sa-
tis periti non sunt; hoc illis
gratissimum fore spero, ut & do-
ctiores ab inuidia & odio im-
munes spero id æquo animo
laturos.



DEFINITIONES.

1. Triangulum est figura contenta sub tribus lateribus, quæ tres angulos comprehendunt.
2. Duplex triangulorum genus Geometræ considerant in trigonometria, scilicet rectilineum & sphæricum : triangulum rectilineum est, quod habet tres lineas rectas pro lateribus suis.

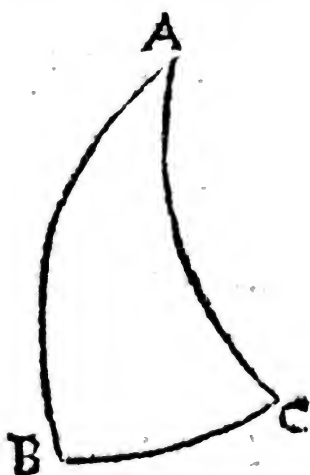
Vt in hac figura, triangulum



ABC rectilineum dicitur.

3. Triangulum vero sphaericum est, quod in superficie sphaerica fit à tribus maximorum circulorum arcibus.

In hac figura, triangulum AB



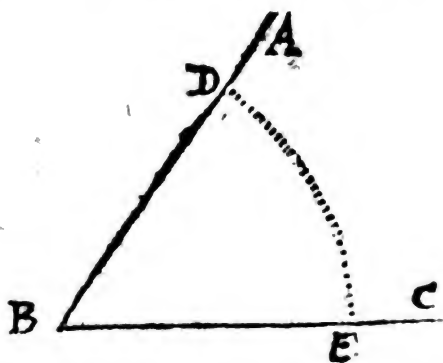
triangulum sphaericum dicitur.

Observandum est nos latera triangulorum rectilineorum vulgo metiri per pedes, passus, hexapodas, et alia huiusmodi mensurarium generum. Sed latera triangulorum sphaericorum

rum numerantur in gradibus, hoc est in partibus quales circuli circumferentia 360 complectitur, quarum unaquaque dividitur in 60 alias particulas quæ vocantur minuta, & unumquodque minutum dividitur in 60 alias minores particulas quæ vocantur secunda, &c.

4. Angulus trianguli rectilinei mensuram capit ab arcu, qui in circulo descripto à vertice anguli, inter duas lineas rectas angulum constituentes interijcitur: & hic arcus vocatur arcus anguli.

Vt in hac figura angulus rectili-



neus ABC mensuratur ab arcu circuli DE , qui describitur à puncto anguli B , & inter lineas rectas AB , CB , interijcitur, qua hunc angulum ABC constituunt: & idem arcus etiam vocatur arcus dicti anguli ABC .

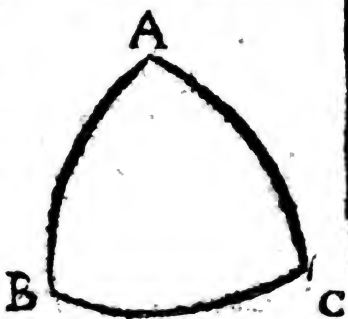
5. Angulus vero trianguli Sphaerici metitur ab arcu circuli maximi à vertice anguli huius tanquam polo descripti, & inter duos arcus dictum angulum comprehendentes interijcitur, productos si opus est: & hic arcus etiam arcus anguli vocatur.

Vt in hac figura arcus maximi circuli BC descripti à puncto

A , & interceptus inter duos arcus

AB , AC , qui

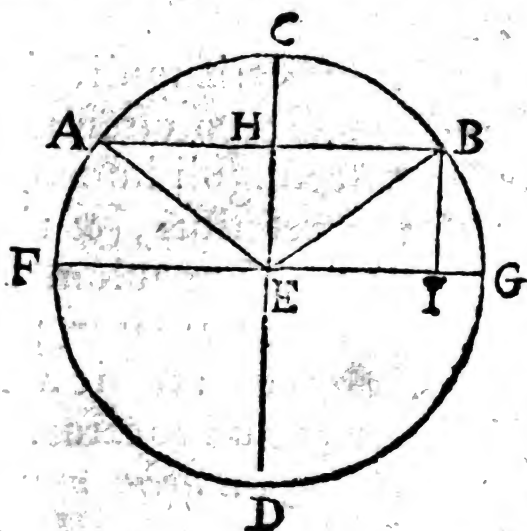
angulum sphaericum BAC faciunt, est mensura



6 Arcus ipsius anguli BAC.

6 Chorda arcus (quæ Magino subtensa, alijs inscripta dicitur) est linea recta ab vno extremorum arcus ad alterum ducta.

In hac apposita figura recta linea



AB chorda dicitur, tam arcus ACB quam arcus ADB.

7 Sinus rectus arcus (qui alijs sinus primus) est dimidiū chordæ subtendentis duplum illius arcus. vel aliter. Est linea recta perpendicularis cadens ab vno

extremo arcus illius, cuius dicitur sinus rectus, in diametrum circuli ab altero extremo eiusdem arcus ductam.

Vt in precedenti figura linea recta BH dicitur sinus rectus arcus BC, quia est dimidium chordae AHB, subtendentis arcum ACB, duplum illius arcus BC: siue quia linea illa BH ducitur ab uno extremo ipsius arcus, nempe ab extremo B, perpendiculariter ad diametrum circuli CD ductam per C alterum extremum eiusdem arcus. Et iisdem de causis, eadem linea BH dicitur sinus rectus arcus BD. Sic etiam linea recta EI dicitur sinus rectus, tam arcus BG, quam arcus FAB.

8. Sinus versus arcus (nonnulli sagittam vocant) est pars diametri circuli inter extremum illius arcus, & sinum rectum eiusdem arcus intercepta.

Vt CH, quae est pars diametri CD

interiecta inter C extremum arcus BC, & BH sinum rectum eiusdem arcus, dicitur sinus versus dicti arcus BC. Et sic DH dicitur sinus versus arcus BD: & GI sinus versus arcus BG.

9. Sinus totus est radius, sine semidiameter circuli, hoc est sinus rectus, aut versus quadrantis circuli.

Semidiameter CE vel EG, quae sinus est tam rectus, quam versus quadrantis CBG, dicitur etiam sinus totus, quia Geometra constituto hac semidiametro 1000000, vel 100000000, aut alterius numeri partium aequalium inveniunt quot earum partium debeant continere omnes alij sinus.

10. Complementum arcus aliquis, est id quo arcus ille differt à quadrante circuli.

Sic arcus BG est complementum arcus BC, quia est differentia ipsius

arcus BC à quadrante circuli CG .
Sed idem arcus BG est etiam complementum arcus BGD ; nam ille arcus BG est differentia ipsius arcus BGD à quarta parte circumferentia circuli DG .

Sed complementum arcus ad semicirculum est defectus ipsius ad semicirculum. Sic arcus BC , qui est defectus, vel differentia arcus BGD à semicirculo CBD , dicitur complementum arcus BGD ad semicirculum.

II. Complementum anguli, est differentia ipsius anguli à recto angulo.

Vt angulus CEB , dicitur complementum anguli BEG , quia est differentia ipsius ab angulo recto CEG . Sic etiam angulus BEG , dicitur complementum anguli obtusi BED .

12. Sinus complementi alicuius arcus (qui quibusdam sinus rectus

(secundus) est sinus rectus arcus, qui complementum est illius.

Sic recta linea BI est sinus complementi arcus CB, quia est sinus rectus arcus BG, qui est complementum arcus BG.

13. Sinus anguli, tam rectus, & versus, quam complementi est sinus arcus illius anguli.

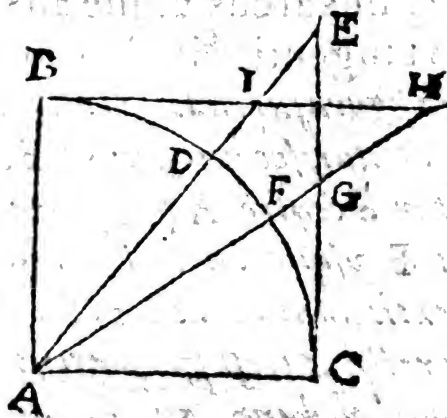
Quia linea recta BH est sinus rectus arcus BC, qui est arcus anguli CEB, eadem est etiam sinus rectus illius anguli: Et CH sinus versus arcus BC, dicitur sinus versus eiusdem anguli CEB: Sed BI sinus complementi dicti arcus BC, est etiam sinus complementi supradicti anguli CEB.

14. Tangens alicuius arcus (nonnulli pro sinum vocant, alij adscriptam) est linea recta quæ tangens extremum illius arcus, concurrit cum semidiametro circuli, producta per alterum

extre

extremum eiusdem arcus ultra
circulum.

Vt in hac figura recta linea BH



dicitur tangens arcus BF, quia
tangit eum in extremitate B, &
terminatur à semidiametro AF,
que transiens per extremum arcus
F producitur extra circulum usque
ad H. Sic etiam recta linea CE di-
citur tangens arcus CD. Apparet
vero eandem tangentem referri ad
arcum, & ad angulum ei respon-
dentem.

B

15. Secans alicuius arcus, (nonnulli appellant hypotenusam, alij transsinuosam) est recta linea ducta à centro circuli per extremum illius arcus vsque ad summum tangentis eiusdem arcus.

Vt in figura supradicta recta linea AH dicitur secans arcus EF, quia ducitur à centro A per extremum arcus F vsque ad H summitatem tangentis illius arcus BF. Sic etiam linea recta AE est secans arcus CD. Quemadmodum autem angulus habet eundem sinum & eandem tangentem quam arcus eius, habet etiam eandem secantem. Sic linea recta AG dicitur secans tam arcus CE, quam anguli CAG. Item recta linea AI est secans non tantum arcus BD, sed etiam anguli BAD.

CANON
SINVVM,
TANGENTIVM,
ET SECANTIVM,
RESPECTV
RADII

Partium 100000.

B ij

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	29	29	1000000
2	58	58	1000000
3	87	87	1000000
4	116	116	1000000
5	145	145	1000000
6	175	175	1000000
7	204	204	1000000
8	233	233	1000000
9	262	262	1000000
0	291	291	1000000
1	320	320	1000001
2	349	349	1000001
3	378	378	1000001
4	407	407	1000001
5	436	436	1000001
6	465	465	1000001
7	494	494	1000001
8	524	524	1000001
9	553	553	1000002
0	582	582	1000002
1	611	611	1000002
2	640	640	1000002
3	669	669	1000002
4	698	698	1000002
5	727	727	1000003
6	756	756	1000003
7	785	785	1000003
8	815	815	1000003
9	844	844	1000004
0	873	873	1000004

<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
99999	343774667	343774682
99999	171887319	171887348
99999	114591530	114591574
99999	85943630	85943689
99999	68754887	68754960
99999	57295721	57295809
99999	49110600	49110702
99999	42971757	42971873
99999	38197099	38197230
99999	34377371	34377516
99999	31252137	31252297
99999	28647773	28647948
99999	26444080	26444269
99999	24555198	24555402
99999	22918166	22918385
99999	21485762	21485995
99999	20221875	20222122
99999	19098419	19098680
99998	18093220	18093496
99998	17188540	17188831
99998	16370059	16370325
99998	15625908	15626228
99998	14946502	14946837
99998	14323712	14324061
99997	13750745	13751108
99997	13221851	13222229
99997	12732134	12732526
99997	12277396	12277803
99996	11854018	11854440
99996	11458865	11459302

B iiij

<i>Sinus</i>	<i>Tangens.</i>	<i>Secans</i>
902	902	100004
931	931	100004
960	960	100005
989	989	100005
1018	1018	100005
1047	1047	100005
1076	1076	100006
1105	1105	100006
1134	1134	100006
1164	1164	100007
1193	1193	100007
1222	1222	100007
1251	1251	100008
1280	1280	100008
1309	1309	100009
1338	1338	100009
1367	1367	100009
1396	1396	100010
1425	1425	100010
1454	1455	100011
1483	1484	100011
1513	1513	100012
1542	1542	100012
1571	1571	100012
1600	1600	100013
1629	1629	100013
1658	1658	100014
1687	1687	100014
1716	1716	100015
1745	1745	100015

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
9	999996	11089205	11089656
8	999996	10742648	10743114
7	999995	10417094	10417574
6	999995	10110690	10111185
5	999995	9821794	9822303
4	999995	9548948	9549471
3	999994	9290849	9291387
2	999994	9046334	9046886
1	999994	8814357	8814924
0	999993	8593979	8594561
9	999993	8384351	8384947
8	999993	8184704	8185315
7	999992	7994343	7994968
6	999992	7812634	7813274
5	999991	7639001	7639655
4	999991	7472917	7473586
3	999991	7313899	7314583
2	999990	7161507	7162205
1	999990	7015335	7016047
0	999989	6875008	6875736
9	999989	6740185	6740927
8	999989	6610547	6611303
7	999988	6485801	6486572
6	999988	6365674	6366460
5	999987	6249915	6250715
4	999987	6138291	6139105
3	999986	6030582	6031411
2	999986	5926587	5927431
1	999985	5826117	5826975
0	999985	5728996	5729869
9	B iiij		

I	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	1774	1775	100016
2	1803	1804	100016
3	1832	1833	100017
4	1862	1862	100017
5	1891	1891	100018
6	1920	1920	100018
7	1949	1949	100019
8	1978	1978	100020
9	2007	2007	100020
10	2036	2036	100021
11	2065	2066	100021
12	2094	2095	100022
13	2123	2124	100022
14	2152	2153	100023
15	2181	2182	100023
16	2211	2211	100024
17	2240	2240	100025
18	2269	2269	100026
19	2298	2298	100026
20	2327	2328	100027
21	2356	2357	100028
22	2385	2386	100028
23	2414	2415	100029
24	2443	2444	100030
25	2472	2473	100031
26	2501	2502	100031
27	2530	2531	100032
28	2560	2560	100033
29	2589	2589	100034
30	2618	2619	100034

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	99984	5635059	5635946
58	99984	5544152	5545053
57	99983	5456130	5457046
56	99983	5370859	5371790
55	99982	5288211	5289156
54	99982	5208067	5209427
53	99981	5130316	5131290
52	99980	5054851	5055840
51	99980	4981573	4982561
50	99979	4910388	4911406
49	99979	4841208	4842241
48	99978	4773950	4774997
47	99977	4708534	4709596
46	99977	4644886	4645963
45	99976	4582935	4584026
44	99976	4522614	4523719
43	99975	4463860	4464980
42	99974	4406611	4407746
41	99974	4350812	4351961
40	99973	4296408	4297571
39	99972	4243346	4244525
38	99972	4191579	4192772
37	99971	4141059	4142266
36	99970	4091741	4092963
35	99969	4043584	4044820
34	99969	3996546	3997797
33	99968	3950589	3951855
32	99967	3905677	3906957
31	99966	3861774	3863068
30	99966	3818846	3820155

<i>I</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	2647	2648	100035
32	2676	2677	100036
33	2705	2706	100037
34	2734	2735	100037
35	2763	2764	100038
36	2792	2793	100039
37	2821	2822	100040
38	2850	2851	100041
39	2879	2881	100041
40	2908	2910	100042
41	2938	2939	100043
42	2967	2968	100044
43	2996	2997	100045
44	3025	3026	100046
45	3054	3055	100047
46	3083	3084	100048
47	3112	3113	100048
48	3141	3143	100049
49	3170	3172	100050
50	3199	3201	100051
51	3228	3230	100052
52	3257	3259	100053
53	3286	3288	100054
54	3316	3317	100055
55	3345	3346	100056
56	3374	3376	100057
57	3403	3405	100058
58	3432	3434	100059
59	3461	3463	100060
60	3490	3492	100061

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	99965	3776861	3778185
28	99964	3735789	3737127
27	99963	3695600	3696953
26	99962	3656266	3657633
25	99962	3617760	3619141
24	99961	3580055	3581452
23	99960	3543128	3544539
22	99959	3506955	3508380
21	99959	3471511	3472951
20	99958	3436777	3438232
19	99957	3402730	3404199
18	99956	3369351	3370835
17	99955	3336619	3338118
16	99954	3304517	3306030
15	99953	3273026	3274554
14	99952	3242129	3243671
13	99952	3211810	3213366
12	99951	3182052	3183623
11	99950	3152839	3154425
10	99949	3124158	3125758
9	99948	3095993	3097607
8	99947	3068331	3069960
7	99946	3041158	3042802
6	99945	3014462	3016120
5	99944	2988230	2989903
4	99943	2962450	2964137
3	99942	2937111	2938812
2	99941	2912200	2913917
1	99940	2887709	2889440
0	99939	2863625	2865371

2	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	3591	3521	100062
2	3548	3550	100063
3	3577	3579	100064
4	3606	3609	100065
5	3635	3638	100066
6	3664	3667	100067
7	3693	3696	100068
8	3722	3725	100069
9	3752	3754	100070
10	3761	3783	100072
11	3809	3812	100073
12	3839	3842	100074
13	3868	3871	100075
14	3897	3900	100076
15	3926	3929	100077
16	3955	3958	100078
17	3984	3987	100079
18	4013	4016	100081
19	4042	4046	100082
20	4071	4075	100083
21	4100	4104	100084
22	4129	4133	100085
23	4159	4162	100087
24	4188	4191	100088
25	4217	4220	100089
26	4246	4250	100090
27	4275	4279	100091
28	4304	4308	100093
29	4333	4337	100094
30	4362	4366	100095

Sinus

Tangens

Secans

59	99938	2839940	2841700
58	99937	2816642	2818417
57	99936	2793723	2795512
56	99935	2771174	2772978
55	99934	2748985	2750804
54	99933	2727149	2728981
53	99932	2705656	2707503
52	99931	2684498	2686360
51	99930	2663669	2665545
50	99928	2643160	2645051
49	99927	2622964	2624869
48	99926	2603074	2604994
47	99925	2583482	2585417
46	99924	2564183	2566132
45	99923	2545179	2547134
44	99922	2526436	2528414
43	99921	2507976	2509969
42	99919	2489783	2491790
41	99918	2471851	2473873
40	99917	2454176	2456212
39	99916	2436751	2438802
38	99915	2419571	2421637
37	99913	2402632	2404712
36	99912	2385928	2388022
35	99911	2369454	2371563
34	99910	2353205	2355329
33	99909	2337178	2339316
32	99907	2321367	2323510
31	99906	2305768	2307935
30	99905	2290377	2292559

2	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	4391	4395	100097
32	4420	4424	100098
33	4449	4454	100099
34	4470	4463	100100
35	4507	4512	100102
36	4536	4541	100103
37	4565	4570	100106
38	4594	4599	100104
39	4623	4628	100107
40	4653	4658	100108
41	4682	4687	100110
42	4711	4716	100111
43	4740	4745	100113
44	4769	4774	100114
45	4798	4803	100115
46	4827	4832	100117
47	4856	4862	100118
48	4885	4891	100120
49	4914	4920	100121
50	4943	4948	100122
51	4972	4978	100124
52	5001	5007	100125
53	5030	5037	100127
54	5059	5066	100128
55	5088	5095	100130
56	5117	5124	100131
57	5146	5153	100133
58	5175	5182	100134
59	5205	5212	100136
60	5234	5241	100137

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	99904	2275189	2277386
28	99902	2260201	2262413
27	99901	2245410	2247635
26	99900	2230810	2233050
25	99898	2216398	2218653
24	99897	2202171	2204440
23	99896	2188125	2190409
22	99894	2174257	2176555
21	99893	2160563	2162876
20	99892	2147040	2149368
19	99890	2133685	2136027
18	99889	2120495	2122851
17	99888	2107466	2109838
16	99886	2094594	2096982
15	99885	2081883	2084283
14	99883	2069322	2071737
13	99882	2056911	2059341
12	99881	2044649	2047093
11	99879	2032531	2034989
10	99878	2020555	2023028
9	99876	2008720	2011207
8	99875	1997022	1999524
7	99873	1985459	1987976
6	99872	1974029	1976560
5	99870	1962730	1965275
4	99869	1951558	1954119
3	99867	1940513	1943088
2	99866	1929592	1932182
1	99864	1918793	1921397
0	99863	1908114	1910732

3	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	5263	5270	100139
2	5292	5299	100140
3	5321	5328	100141
4	5350	5357	100143
5	5379	5387	100145
6	5408	5416	100147
7	5437	5445	100148
8	5466	5474	100150
9	5495	5503	100151
10	5524	5533	100153
11	5553	5562	100155
12	5582	5591	100156
13	5611	5620	100158
14	5640	5649	100159
15	5669	5678	100161
16	5698	5708	100163
17	5727	5737	100164
18	5756	5766	100166
19	5785	5795	100168
20	5814	5824	100169
21	5844	5854	100171
22	5873	5883	100173
23	5902	5912	100175
24	5931	5941	100176
25	5960	5970	100178
26	5989	5999	100180
27	6018	6029	100182
28	6047	6058	100183
29	6076	6087	100185
30	6105	6116	100187

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	99861	1897552	1900185
58	99860	1887107	1889754
57	99858	1876775	1879438
56	99857	1866556	1869233
55	99855	1856447	1859139
54	99854	1846447	1849153
53	99852	1836554	1839274
52	99850	1826765	1829500
51	99849	1817081	1819830
50	99847	1807498	1810262
49	99846	1798015	1800794
48	99844	1788631	1791424
47	99842	1779344	1782152
46	99841	1770153	1772975
45	99839	1761056	1763893
44	99838	1752052	1754903
43	99836	1743139	1746005
42	99834	1734315	1737196
41	99832	1725581	1728476
40	99831	1716934	1719843
39	99829	1708372	1711297
38	99827	1699896	1702835
37	99826	1691503	1694456
36	99824	1683191	1686159
35	99822	1674961	1677944
34	99821	1666811	1669808
33	99819	1658740	1661751
32	99817	1650746	1653772
31	99815	1642828	1645869
30	99813	1634986	1638041

3	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	6134	6145	100189
32	6163	6175	100190
33	6192	6204	100192
34	6221	6233	100194
35	6250	6262	100196
36	6279	6291	100198
37	6308	6321	100200
38	6337	6350	100201
39	6366	6379	100203
40	6395	6408	100205
41	6424	6437	100207
42	6453	6467	100209
43	6482	6496	100211
44	6511	6525	100213
45	6540	6554	100215
46	6569	6584	100216
47	6598	6613	100218
48	6627	6642	100220
49	6656	6671	100222
50	6685	6700	100224
51	6714	6730	100226
52	6743	6759	100228
53	6773	6788	100230
54	6802	6817	100232
55	6831	6847	100234
56	6860	6876	100236
57	6889	6905	100238
58	6918	6934	100240
59	6947	6963	100242
60	6976	6993	100244

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	99812	1627217	1630287
28	99810	1619523	1622607
27	99808	1611900	1614999
26	99806	1604348	1607462
25	99804	1596867	1599995
24	99803	1589454	1592597
23	99801	1582110	1585268
22	99799	1574834	1578005
21	99797	1567623	1570810
20	99795	1560478	1563679
19	99793	1553398	1556613
18	99792	1546381	1549611
17	99790	1539428	1542672
16	99788	1532536	1535795
15	99786	1525705	1528979
14	99784	1518935	1522223
13	99782	1512224	1515527
12	99780	1505572	1508890
11	99778	1498978	1502310
10	99776	1492442	1495788
9	99774	1485962	1489323
8	99772	1479537	1482913
7	99770	1473168	1476558
6	99768	1466853	1470258
5	99766	1460592	1464011
4	99764	1454383	1457817
3	99762	1448227	1451676
2	99760	1442123	1445586
1	99758	1436070	1439547
0	99756	1430067	1433559

<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
7005	7022	100246
7034	7051	100248
7063	7080	100250
7092	7110	100252
7121	7139	100254
7150	7168	100257
7179	7197	100259
7208	7227	100261
7237	7256	100263
7266	7285	100265
7295	7314	100267
7324	7344	100269
7353	7373	100271
7382	7402	100274
7411	7431	100276
7440	7461	100278
7469	7490	100280
7498	7519	100282
7527	7548	100284
7556	7578	100287
7585	7607	100289
7614	7636	100291
7643	7665	100293
7672	7695	100296
7701	7724	100298
7730	7753	100300
7759	7782	100302
7788	7812	100305
7817	7841	100307
7846	7870	100309

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	99754	1424113	1427620
58	99752	1418209	1421730
57	99750	1412354	1415889
56	99748	1406546	1410096
55	99746	1400786	1404350
54	99744	1395072	1398651
53	99742	1389404	1392999
52	99740	1383783	1387391
51	99738	1378206	1381829
50	99736	1372674	1376311
49	99734	1367186	1370838
48	99731	1361741	1365408
47	99729	1356339	1360021
46	99727	1350980	1354676
45	99725	1345663	1349373
44	99723	1340387	1344112
43	99721	1335152	1338891
42	99719	1329958	1333712
41	99716	1324803	1328572
40	99714	1319688	1323472
39	99712	1314613	1318411
38	99710	1309576	1313388
37	99707	1304577	1308404
36	99705	1299616	1303458
35	99703	1294692	1298549
34	99700	1289806	1293677
33	99699	1284956	1288841
32	99696	1280142	1284042
31	99694	1275363	1279278
30	99692	1270620	1274549

4	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	7675	7899	100312
32	7904	7929	100314
33	7933	7958	100316
34	7962	7987	100318
35	7991	8017	100321
36	8020	8046	100323
37	8049	8075	100325
38	8078	8104	100328
39	8107	8134	100330
40	8136	8163	100333
41	8165	8192	100335
42	8194	8221	100337
43	8223	8251	100340
44	8252	8280	100342
45	8281	8309	100345
46	8310	8339	100347
47	8339	8368	100349
48	8368	8397	100352
49	8397	8427	100354
50	8426	8456	100357
51	8455	8485	100359
52	8484	8514	100362
53	8513	8544	100364
54	8542	8573	100367
55	8571	8602	100369
56	8600	8631	100372
57	8629	8661	100374
58	8658	8690	100377
59	8687	8720	100379
60	8716	8749	100382

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	99689	1265912	1269857
28	99687	1261239	1265198
27	99685	1256600	1260572
26	99683	1251994	1255981
25	99680	1247422	1251424
24	99678	1242883	1246899
23	99676	1238377	1242408
22	99673	1233903	1237948
21	99671	1229461	1233521
20	99668	1225051	1229125
19	99666	1220672	1224761
18	99664	1216324	1220427
17	99661	1212006	1216125
16	99659	1207719	1211852
15	99657	1203462	1207610
14	99654	1199235	1203397
13	99652	1195037	1199214
12	99649	1190868	1195059
11	99647	1186728	1190934
10	99644	1182617	1186837
9	99642	1178533	1182768
8	99639	1174478	1178727
7	99637	1170450	1174714
6	99635	1166450	1170728
5	99632	1162476	1166769
4	99630	1158529	1162837
3	99627	1154609	1158932
2	99625	1150715	1155052
1	99622	1146847	1151199
0	99619	1143005	1147371
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<i>S</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	8745	8778	100385
2	8774	8807	100387
3	8802	8837	100390
4	8831	8866	100392
5	8860	8895	100395
6	8889	8925	100397
7	8918	8954	100400
8	8947	8983	100403
9	8976	9013	100405
10	9005	9042	100408
11	9034	9071	100411
12	9063	9101	100413
13	9092	9130	100416
14	9121	9159	100419
15	9150	9189	100421
16	9179	9218	100424
17	9208	9247	100427
18	9237	9277	100429
19	9266	9306	100432
20	9295	9335	100435
21	9324	9365	100438
22	9353	9394	100440
23	9382	9423	100443
24	9411	9453	100446
25	9440	9482	100449
26	9469	9511	100451
27	9498	9541	100454
28	9527	9570	100457
29	9556	9600	100460
30	9585	9629	100462

51	99596	1113163	1117646
		1109542	1114039
50	99594	1105943	1110455
49	99591	1102368	1106894
48	99588	1098815	1103356
47	99586	1095285	1099841
46	99583	1091777	1096348
45	99580	1088292	1092877
44	99578	1084829	1089128
43	99575	1081387	1086001
42	99572	1077967	1082596
41	99570	1074569	1079212
40	99567	1071191	1075849
39	99564	1067835	1072507
38	99562	1064499	1069186
37	99559	1061184	1065885
36	99556	1057889	1062605
35	99553	1054615	1059346
34	99551	1051361	1056106
33	99548	1048126	1052886
32	99545	1044911	1049685
31	99542	1041716	1046505
30	99540	1038540	1043343

<i>S</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	9614	9659	100465
32	9642	9688	100468
33	9671	9717	100471
34	9700	9746	100474
35	9729	9776	100477
36	9758	9805	100480
37	9787	9834	100482
38	9816	9864	100485
39	9845	9893	100488
40	9874	9923	100491
41	9903	9952	100494
42	9932	9981	100497
43	9961	10011	100500
44	9990	10040	100503
45	10019	10069	100506
46	10048	10099	100509
47	10077	10128	100512
48	10106	10158	100515
49	10135	10187	100518
50	10164	10216	100521
51	10192	10246	100524
52	10221	10275	100527
53	10250	10305	100530
54	10279	10334	100533
55	10308	10363	100536
56	10337	10393	100539
57	10366	10422	100542
58	10395	10452	100545
59	10424	10481	100548
60	10452	10510	100551

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
9	99537	1035383	1040201
8	99534	1032245	1037077
7	99531	1029126	1033973
6	99528	1026025	1030887
5	99526	1022943	1027819
4	99523	1019879	1024770
3	99520	1016833	1021739
2	99517	1013805	1018725
1	99514	1010795	1015730
0	99511	1007803	1012752
9	99508	1004828	1009792
8	99506	1001871	1006849
7	99503	998930	1003923
6	99500	996007	1001015
5	99497	993101	998123
4	99494	990211	995248
3	99491	987338	992389
2	99488	984482	989548
1	99485	981641	986722
0	99481	978817	983912
9	99479	976009	981119
8	99476	973217	978341
7	99473	970441	975579
6	99470	967680	972833
5	99467	964935	970103
4	99464	962205	967387
3	99461	959490	964687
2	99458	956791	962002
1	99455	954106	959332
0	99452	951436	956677

6	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	10482	10540	100554
2	10511	10569	100557
3	10540	10599	100560
4	10569	10628	100563
5	10597	10658	100566
6	10626	10687	100569
7	10655	10716	100573
8	10684	10746	100576
9	10713	10775	100579
10	10742	10805	100582
11	10771	10834	100585
12	10800	10863	100588
13	10829	10893	100592
14	10858	10922	101595
15	10887	10952	100598
16	10916	10981	100601
17	10945	11011	100604
18	10974	11040	100608
19	11002	11070	100611
20	11031	11099	100614
21	11060	11128	100617
22	11089	11158	100621
23	11118	11187	100624
24	11147	11217	100627
25	11176	11246	100630
26	11205	11276	100634
27	11234	11305	100637
28	11263	11335	100640
29	11291	11364	100644
30	11320	11394	100647

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	99449	948781	954037
58	99446	946141	951431
57	99443	943515	948800
56	99440	940904	946203
55	99437	938307	943620
54	99434	935724	941052
53	99431	933154	938497
52	99428	930599	935957
51	99424	928058	933430
50	99421	925530	930917
49	99418	923016	928417
48	99415	920516	925931
47	99412	918028	923459
46	99409	915554	920999
45	99406	913093	918553
44	99402	910646	916120
43	99399	908211	913699
42	99396	905789	911292
41	99393	903379	908897
40	99390	900983	906515
39	99386	898598	904146
38	99383	896227	901788
37	99380	893867	899444
36	99377	891520	897111
35	99374	889185	894791
34	99370	886862	892482
33	99367	884551	890186
32	99364	882252	887901
31	99360	879964	885628
30	99357	877689	883367

6	Sinus	Tangens	Secans
31	11349	11423	100650
32	11378	11452	100654
33	11407	11482	100657
34	11436	11511	100660
35	11465	11541	100664
36	11494	11570	100667
37	11523	11600	100671
38	11552	11629	100674
39	11580	11659	100677
40	11609	11688	100681
41	11638	11718	100684
42	11667	11747	100688
43	11696	11777	100691
44	11725	11806	100695
45	11754	11836	100698
46	11783	11865	100701
47	11812	11895	100705
48	11840	11924	100708
49	11869	11954	100712
50	11899	11983	100715
51	11927	12013	100719
52	11956	12042	100722
53	11985	12072	100726
54	12014	12101	100730
55	12043	12131	100733
56	12071	12160	100737
57	12100	12190	100740
58	12129	12219	100744
59	12158	12249	100747
60	12186	12279	100751

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	99354	875425	881118
28	99351	873172	878880
27	99347	870931	876653
26	99344	868701	874438
25	99341	866482	872234
24	99337	864275	870041
23	99334	862078	867859
22	99331	859893	865688
21	99327	857718	863528
20	99324	855555	861379
19	99320	853402	859241
18	99317	851259	857113
17	99314	849127	854996
16	99310	847007	852889
15	99307	844896	850793
14	99303	842795	848707
13	99300	840705	846632
12	99297	838626	844566
11	99293	836555	842511
10	99290	834496	840466
9	99287	832446	838431
8	99283	830406	836405
7	99279	828376	834390
6	99276	826355	832384
5	99272	824345	830388
4	99269	822344	828402
3	99265	820352	826425
2	99262	818370	824457
1	99258	816398	822500
0	99255	814435	820551

7	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	12216	12308	100755
2	12245	12338	100758
3	12274	12367	100762
4	12302	12397	100765
5	12331	12426	100769
6	12360	12456	100773
7	12389	12485	100776
8	12418	12515	100780
9	12447	12544	100784
10	12476	12574	100787
11	12504	12603	100791
12	12533	12633	100795
13	12562	12662	100799
14	12591	12693	100802
15	12620	12722	100806
16	12649	12751	100810
17	12678	12781	100813
18	12706	12810	100817
19	12735	12840	100821
20	12764	12869	100825
21	12793	12899	100828
22	12822	12929	100832
23	12851	12958	100836
24	12880	12988	100840
25	12908	13017	100844
26	12937	13047	100848
27	12966	13076	100851
28	12995	13106	100855
29	13024	13136	100859
30	13053	13165	100863

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	99251	812481	818612
58	99247	810536	816681
57	99244	808600	814760
56	99240	806674	812849
55	99237	804756	810946
54	99233	802848	809052
53	99230	800948	807167
52	99226	799058	805291
51	99222	797176	803423
50	99219	795302	801564
49	99215	793438	799714
48	99211	791582	797873
47	99208	789734	796040
46	99204	787895	794216
45	99200	786064	792399
44	99197	784242	790591
43	99193	782428	788792
42	99189	780622	787001
41	99186	778825	785218
40	99182	777035	783443
39	99178	775254	781677
38	99175	773480	779918
37	99171	771715	778167
36	99167	769957	776424
35	99163	768208	774689
34	99160	766466	772962
33	99156	764732	771242
32	99152	763005	769530
31	99148	761287	767826
30	99144	759575	766130

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7	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	13081	13195	100867
32	13110	13224	100871
33	13139	13254	100875
34	13168	13284	100878
35	13197	13313	100882
36	13226	13342	100886
37	13254	13372	100890
38	13283	13402	100894
39	13312	13432	100898
40	13341	13461	100902
41	13370	13491	100906
42	13399	13521	100910
43	13427	13550	100914
44	13456	13580	100918
45	13485	13609	100922
46	13514	13639	100926
47	13543	13669	100930
48	13572	13698	100934
49	13600	13728	100938
50	13629	13758	100942
51	13658	13787	100946
52	13687	13817	100950
53	13716	13846	100954
54	13744	13876	100958
55	13773	13906	100962
56	13802	13935	100966
57	13831	13965	100970
58	13860	13995	100975
59	13889	14024	100979
60	13917	14054	100983

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	99141	757872	764441
28	99137	756176	762759
27	99133	754487	761085
26	99129	752806	759418
25	99125	751132	757759
24	99122	749465	756107
23	99118	747806	754462
22	99114	746154	752825
21	99110	744509	751194
20	99106	742871	749571
19	99102	741240	747955
18	99098	739616	746346
17	99094	737999	744743
16	99090	736389	743148
15	99087	734786	741560
14	99083	733190	739978
13	99079	731600	738403
12	99075	730018	736835
11	99071	728442	735274
10	99067	726873	733719
9	99063	725310	732171
8	99059	723754	730630
7	99055	722204	729095
6	99051	720661	727566
5	99047	719125	726044
4	99043	717594	724529
3	99039	716071	723019
2	99035	714553	721517
1	99031	713042	720020
0	99027	711537	718530
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8	<i>Sines</i>	<i>Tangens</i>	<i>Secans</i>
1	13946	14084	100987
2	13975	14113	100991
3	14004	14143	100995
4	14033	14173	100999
5	14061	14202	101004
6	14090	14232	101008
7	14119	14262	101012
8	14148	14291	101016
9	14177	14321	101020
10	14205	14351	101024
11	14234	14381	101029
12	14263	14410	101033
13	14292	14440	101037
14	14320	14470	101041
15	14349	14499	101046
16	14378	14529	101050
17	14407	14559	101054
18	14436	14588	101059
19	14464	14618	101063
20	14493	14648	101067
21	14522	14678	101071
22	14551	14707	101076
23	14550	14737	101080
24	14608	14767	101084
25	14637	14796	101089
26	14666	14826	101093
27	14695	14856	101097
28	14723	14886	101102
29	14752	14915	101106
30	14781	14945	101111

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	99023	710038	717046
58	99019	708546	715568
57	99015	707059	714096
56	99011	705579	712630
55	99006	704105	711171
54	99002	702637	709717
53	98998	701174	708269
52	98994	699718	706828
51	98990	698268	705392
50	98986	696823	703962
49	98982	695385	702538
48	98978	693952	701120
47	98973	692525	699708
46	98969	691104	698301
45	98965	689688	696900
44	98961	688278	695505
43	98957	686872	694115
42	98953	685475	692731
41	98948	684082	691352
40	98944	682694	689979
39	98940	681312	688612
38	98936	679936	687250
37	98931	678564	685893
36	98927	677199	684542
35	98923	675838	683196
34	98919	674483	681856
33	98914	673133	680521
32	98910	671789	679191
31	98906	670450	677866
30	98902	669116	676547
<i>Si</i>	<i>D</i> <i>iiij</i>		

8	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	14810	14975	101115
32	14838	15005	101119
33	14867	15034	101124
34	14896	15064	101128
35	14925	15094	101133
36	14954	15124	101137
37	14982	15153	101142
38	15011	15183	101146
39	15040	15213	101151
40	15069	15243	101155
41	15097	15272	101159
42	15126	15302	101164
43	15155	15332	101169
44	15184	15362	101173
45	15212	15391	101178
46	15241	15421	101182
47	15270	15451	101187
48	15299	15481	101191
49	15327	15511	101196
50	15356	15540	101200
51	15385	15570	101205
52	15414	15600	101209
53	15442	15630	101214
54	15471	15660	101219
55	15500	15689	101223
56	15529	15719	101228
57	15557	15749	101233
58	15586	15779	101237
59	15615	15809	101242
60	15643	15838	101247

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	98897	667787	675233
28	98893	666463	673924
27	98889	665144	672620
26	98884	663831	671321
25	98880	662523	670027
24	98876	661219	668738
23	98871	659921	667454
22	98867	658627	666176
21	98863	657339	664902
20	98858	656055	663633
19	98854	654776	662469
18	98849	653503	661110
17	98845	652233	659855
16	98841	650970	658606
15	98836	649710	657361
14	98832	648456	656121
13	98827	647206	654886
12	98823	645961	653655
11	98818	644720	652429
10	98814	643484	651208
9	98809	642253	649991
8	98805	641026	648779
7	98800	639804	647572
6	98796	638587	646369
5	98791	637374	645171
4	98787	636165	643977
3	98782	634961	642787
2	98778	633761	641602
1	98773	632566	640422
0	98769	631375	639245

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9	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	15672	15368	101251
2	15701	15898	101256
3	15730	15928	101261
4	15758	15958	101265
5	15787	15988	101270
6	15816	16017	101275
7	15845	16047	101279
8	15873	16077	101284
9	15902	16107	101289
10	15931	16137	101294
11	15959	16167	101298
12	15988	16196	101303
13	16017	16226	101308
14	16046	16256	101313
15	16074	16286	101317
16	16103	16316	101322
17	16132	16346	101327
18	16160	16376	101332
19	16189	16405	101337
20	16218	16435	101342
21	16246	16465	101346
22	16275	16495	101351
23	16304	16525	101356
24	16333	16555	101361
25	16361	16585	101366
26	16390	16615	101371
27	16419	16645	101376
28	16447	16674	101381
29	16476	16704	101386
30	16505	16734	101391

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	98764	630189	638073
58	98760	629007	636906
57	98755	627829	635743
56	98751	626655	634584
55	98746	625486	633429
54	98741	624321	632279
53	98737	623160	631133
52	98732	622003	629991
51	98728	620851	628853
50	98723	619703	627719
49	98718	618559	626590
48	98714	617419	625464
47	98709	616283	624343
46	98704	615151	623226
45	98700	614023	622113
44	98695	612899	621004
43	98690	611779	619898
42	98686	610664	618797
41	98681	609552	617700
40	98676	608444	616607
39	98671	607340	615517
38	98667	606240	614432
37	98662	605143	613350
36	98657	604051	612273
35	98652	602962	611199
34	98648	601878	610128
33	98643	600797	609062
32	98638	599720	608000
31	98633	598646	606941
30	98629	597576	605886

<i>9</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	16533	16764	101395
32	16562	16794	101400
33	16591	16824	101405
34	16620	16854	101410
35	16648	16884	101415
36	16677	16914	101420
37	16706	16944	101425
38	16734	16974	101430
39	16763	17004	101435
40	16792	17033	101440
41	16820	17063	101445
42	16849	17093	101450
43	16878	17123	101455
44	16906	17153	101460
45	16935	17183	101466
46	16964	17213	101471
47	16992	17243	101476
48	17021	17273	101481
49	17050	17303	101486
50	17078	17333	101491
51	17107	17363	101496
52	17136	17393	101501
53	17164	17423	101506
54	17193	17453	101512
55	17222	17483	101517
56	17250	17513	101522
57	17279	17543	101527
58	17308	17573	101532
59	17336	17603	101537
60	17365	17633	101543

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	98624	596510	604834
28	98619	595448	603787
27	98614	594390	602743
26	98609	593335	601702
25	98604	592283	600666
24	98600	591235	599633
23	98595	590191	598603
22	98590	589150	597577
21	98585	588114	596555
20	98580	587080	595536
19	98575	586050	594521
18	98570	585024	593509
17	98565	584001	592501
16	98561	582982	591496
15	98556	581966	590495
14	98551	580953	589497
13	98546	579944	588502
12	98541	578938	587511
11	98536	577936	586524
10	98531	576937	585539
9	98526	575941	584558
8	98521	574949	583581
7	98516	573960	582606
6	98511	572974	581635
5	98506	571992	580667
4	98501	571013	579703
3	98496	570037	578742
2	98491	569064	577783
1	98486	568094	576829
0	98481	567128	575877
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IO	Sinus	Tangens	Secans
1	17393	17663	101548
2	17422	17693	101553
3	17451	17723	101558
4	17479	17753	101564
5	17508	17783	101569
6	17537	17813	101574
7	17565	17843	101579
8	17594	17873	101585
9	17623	17903	101590
10	17651	17933	101595
11	17680	17963	101600
12	17708	17993	101606
13	17737	18023	101611
14	17766	18053	101616
15	17794	18083	101622
16	17823	18113	101627
17	17852	18143	101633
18	17880	18173	101638
19	17909	18203	101643
20	17937	18233	101649
21	17966	18263	101654
22	17995	18293	101659
23	18023	18323	101665
24	18052	18353	101670
25	18081	18383	101676
26	18109	18414	101681
27	18138	18444	101687
28	18166	18474	101692
29	18195	18504	101698
30	18224	18534	101703

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	98476	566165	574929
58	98471	565205	573983
57	98466	564248	573041
56	98460	563295	572102
55	98455	562344	571166
54	98450	561397	570234
53	98445	560452	569304
52	98440	559511	568377
51	98435	558573	567454
50	98430	557638	566533
49	98425	556706	565616
48	98420	555777	564701
47	98414	554851	563790
46	98409	553927	562881
45	98404	553007	561976
44	98399	552090	561073
43	98394	551176	560174
42	98388	550264	559277
41	98383	549356	558383
40	98378	548451	557493
39	98373	547548	556605
38	98368	546648	555719
37	98362	545751	554837
36	98357	544857	553958
35	98352	543966	553081
34	98347	543077	552208
33	98341	542192	551337
32	98336	541309	550468
31	98331	540429	549603
30	98325	539552	548740

IO	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	18252	18564	101709
32	18281	18594	101714
33	18309	18624	101720
34	18338	18654	101725
35	18367	18684	101731
36	18395	18714	101736
37	18424	18745	101742
38	18452	18775	101747
39	18481	18805	101753
40	18509	18835	101758
41	18538	18865	101764
42	18567	18895	101769
43	18595	18925	101775
44	18624	18955	101781
45	18652	18986	101786
46	18681	19016	101792
47	18710	19046	101798
48	18738	19076	101803
49	18767	19106	101809
50	18795	19136	101815
51	18824	19166	101820
52	18852	19197	101826
53	18881	19227	101832
54	18910	19257	101837
55	18938	19287	101843
56	18967	19317	101849
57	18995	19347	101854
58	19024	19378	101860
59	19052	19408	101866
60	19081	19438	101872

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	98320	538677	547881
28	98315	537805	547023
27	98310	536936	546169
26	98304	536070	545317
25	98299	535206	544468
24	98294	534345	543622
23	98288	533487	542778
22	98283	532631	541937
21	98277	531778	541099
20	98272	530928	540263
19	98267	530080	539430
18	98261	529235	538600
17	98256	528393	537772
16	98250	527553	536947
15	98245	526715	536124
14	98240	525881	535304
13	98234	525048	534486
12	98229	524218	533671
11	98223	523391	532859
10	98218	522566	532049
9	98212	521744	531241
8	98207	520925	530436
7	98201	520107	529634
6	98196	519293	528833
5	98190	518480	528036
4	98185	517671	527241
3	98179	516863	526448
2	98174	516058	525658
1	98168	515256	524870
0	98163	514455	524084

II	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	19109	19468	101877
2	19138	19498	101883
3	19167	19529	101889
4	19195	19559	101895
5	19224	19589	101901
6	19252	19619	101906
7	19281	19649	101912
8	19309	19680	101918
9	19338	19710	101924
10	19366	19740	101930
11	19395	19770	101936
12	19423	19801	101941
13	19452	19831	101947
14	19481	19861	101953
15	19509	19891	101959
16	19538	19921	101965
17	19566	19952	101971
18	19595	19982	101977
19	19623	20012	101983
20	19652	20042	101989
21	19680	20073	101995
22	19709	20103	102001
23	19737	20133	102007
24	19766	20164	102013
25	19794	20194	102019
26	19823	20224	102025
27	19851	20254	102031
28	19880	20285	102037
29	19908	20315	102043
30	19937	20345	102049

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	98157	513658	523301
58	98152	512862	522521
57	98146	512069	521742
56	98140	511279	520967
55	98135	510490	520193
54	98129	509704	519421
53	98124	508921	518652
52	98118	508139	517885
51	98112	507360	517121
50	98107	506584	516359
49	98101	505809	515600
48	98096	505037	514842
47	98090	504267	514087
46	98084	503499	513334
45	98079	502734	512583
44	98073	501971	511835
43	98067	501210	511088
42	98061	500451	510344
41	98056	499694	509603
40	98050	498940	508863
39	98044	498188	508126
38	98039	497438	507390
37	98033	496690	506657
36	98027	495945	505926
35	98021	495201	505197
34	98016	494460	504471
33	98010	493721	503746
32	98004	492984	503024
31	97998	492249	502303
30	97992	491516	501585

11	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	19965	20376	102055
32	19994	20406	102061
33	20022	20436	102067
34	20051	20466	102073
35	20079	20497	102079
36	20108	20527	102085
37	20136	20557	102091
38	20165	20588	102097
39	20193	20618	102103
40	20222	20648	102110
41	20250	20679	102116
42	20279	20709	102122
43	20307	20739	102128
44	20336	20770	102134
45	20364	20800	102140
46	20393	20830	102146
47	20421	20861	102153
48	20450	20891	102159
49	20478	20921	102165
50	20507	20952	102171
51	20535	20982	102178
52	20563	21013	102184
53	20592	21043	102190
54	20620	21073	102196
55	20649	21104	102203
56	20677	21134	102209
57	20706	21164	102215
58	20734	21195	102221
59	20762	21225	102228
60	20791	21256	102234

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	97987	490785	500869
28	97981	490056	500155
27	97975	489330	499443
26	97969	488605	498733
25	97963	487882	498025
24	97958	487162	497320
23	97952	486444	496616
22	97946	485727	495914
21	97940	485013	495215
20	97934	484300	494517
19	97928	483590	493821
18	97922	482882	493128
17	97916	482175	492436
16	97910	481471	491746
15	97905	480769	491058
14	97899	480068	490373
13	97893	479370	489689
12	97887	478673	489007
11	97881	477978	488327
10	97875	477286	487649
9	97869	476595	486973
8	97863	475906	486300
7	97857	475219	485627
6	97851	474534	484956
5	97845	473851	484288
4	97839	473170	483621
3	97833	472490	482956
2	97827	471813	482294
1	97821	471137	481633
0	97815	470463	480973

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I 2	Sinus	Tangens	Secans
1	20820	21286	102240
2	20848	21316	102247
3	20876	21347	102253
4	20905	21377	102259
5	20933	21408	102266
6	20962	21438	102272
7	20990	21469	102279
8	21019	21499	102285
9	21047	21529	102291
10	21076	21560	102298
11	21104	21590	102304
12	21132	21621	102311
13	21161	21651	102317
14	21189	21682	102323
15	21218	21712	102330
16	21246	21743	102336
17	21275	21773	102343
18	21303	21804	102349
19	21331	21834	102356
20	21360	21864	102362
21	21388	21895	102369
22	21417	21925	102375
23	21445	21956	102382
24	21474	21986	102388
25	21502	22017	102395
26	21530	22047	102402
27	21559	22078	102408
28	21587	22108	102415
29	21616	22139	102421
30	21644	22169	102428

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	97809	469791	480316
58	97803	469121	479661
57	97797	468452	479007
56	97790	467786	478355
55	97784	467121	477705
54	97778	466458	477057
53	97772	465797	476411
52	97766	465138	475766
51	97760	464480	475123
50	97754	463825	474482
49	97748	463171	473843
48	97742	462518	473205
47	97735	461868	472569
46	97729	461219	471935
45	97723	460572	471303
44	97717	459927	470673
43	97711	459283	470044
42	97705	458641	469417
41	97698	458001	468791
40	97692	457363	468167
39	97686	456726	467545
38	97680	456091	466925
37	97673	455458	466307
36	97667	454826	465690
35	97661	454196	465074
34	97655	453568	464461
33	97648	452941	463849
32	97642	452316	463238
31	97636	451693	462630
30	97630	451071	462023
77	E iij		

12	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	21672	22200	10243
32	21700	22231	10244
33	21729	22261	10244
34	21759	22292	10245
35	21786	22322	10246
36	21814	22353	10246
37	21843	22383	102474
38	21871	22414	102481
39	21899	22444	102488
40	21928	22475	102494
41	21956	22505	102501
42	21985	22536	102508
43	22013	22567	102515
44	22041	22597	102521
45	22070	22628	102528
46	22098	22658	102535
47	22126	22689	102542
48	22155	22719	102548
49	22183	22750	102555
50	22212	22781	102562
51	22240	22811	102569
52	22268	22842	102576
53	22297	22872	102582
54	22325	22903	102589
55	22353	22934	102596
56	22382	22964	102603
57	22410	22995	102610
58	22438	23026	102617
59	22467	23056	102624
50	22495	23086	102630

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	97623	450451	461417
28	97617	449432	460813
27	97611	449215	460211
26	97604	448600	459611
25	97598	447986	459012
24	97592	447374	458414
23	97585	446764	457819
22	97579	446155	457224
21	97573	445548	456632
20	97566	444942	456041
19	97560	444338	455451
18	97553	443735	454863
17	97547	443134	454277
16	97541	442534	453692
15	97534	441936	453109
14	97528	441340	452527
13	97521	440745	451947
12	97515	440152	451368
11	97508	439560	450791
10	97502	438969	450216
9	97496	438381	449642
8	97489	437793	449069
7	97483	437207	448498
6	97476	436623	447928
5	97470	436040	447360
4	97463	435459	446793
3	97457	434879	446228
2	97450	434300	445664
1	97444	433723	445102
0	97437	433148	444541
77	E iij		

13	Sinus	Tangens	Secans
1	22523	23117	102637
2	22552	23148	102644
3	22580	23179	102651
4	22608	23209	102658
5	22637	23240	102665
6	22665	23271	102672
7	22693	23301	102679
8	22722	23332	102686
9	22750	23363	102693
10	22778	23393	102700
11	22807	23424	102707
12	22835	23455	102714
13	22863	23485	102721
14	22892	23516	102728
15	22920	23547	102735
16	22948	23578	102742
17	22977	23608	102749
18	23005	23639	102756
19	23033	23670	102763
20	23062	23700	102770
21	23090	23731	102777
22	23118	23762	102784
23	23146	23793	102791
24	23175	23823	102799
25	23203	23854	102806
26	23231	23885	102813
27	23260	23916	102820
28	23288	23946	102827
29	23316	23977	102834
30	23345	24008	102842

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	97430	432573	443982
58	97424	432000	443424
57	97417	431430	442867
56	97411	430860	442312
55	97404	430291	441759
54	97398	429724	441206
53	97391	429159	440656
52	97384	428595	440106
51	97378	428032	439558
50	97371	427471	439012
49	97365	426911	438466
48	97358	426352	437923
47	97351	425796	437380
46	97345	425239	436839
45	97338	424685	436299
44	97331	424132	435761
43	97325	423580	435224
42	97318	423030	434689
41	97311	422481	434154
40	97304	421933	433621
39	97298	421387	433090
38	97291	420842	432560
37	97284	420298	432031
36	97278	419756	431503
35	97271	419215	430977
34	97264	418675	430452
33	97257	418137	429929
32	97251	417600	429406
31	97244	417064	428885
30	97237	416530	428366

3	Sinus	Tangens	Secans
31	23373	24039	10284
32	23401	24069	10285
33	23429	24100	10286
34	23458	24131	10287
35	23486	24162	10287
36	23514	24193	10288
37	23542	24223	10289
38	23571	24254	10289
39	23599	24285	10290
40	23627	24316	10291
41	23656	24347	10292
42	23684	24377	10292
43	23712	24408	10293
44	23740	24439	10294
45	23769	24470	10295
46	23797	24501	10295
47	23825	24532	10296
48	23853	24562	10297
49	23882	24593	10298
50	23910	24624	10298
51	23938	24655	10299
52	23966	24686	10300
53	23995	24717	10300
54	24023	24747	10301
55	24051	24778	10302
56	24079	24809	10303
57	24108	24840	10303
58	24136	24871	10304
59	24164	24902	10305
60	24192	24933	10306

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	97230	415997	427847
28	97223	415465	427330
27	97217	414934	426812
26	97210	414405	426300
25	97203	413877	425787
24	97196	413350	425275
23	97189	412825	424764
22	97182	412301	424255
21	97176	411778	423746
20	97169	411256	423239
19	97162	410736	422734
18	97155	410216	422229
17	97148	409699	421726
16	97141	409182	421224
15	97134	408666	420723
14	97127	408152	420224
13	97120	407639	419725
12	97113	407127	419227
11	97106	406616	418730
10	97100	406107	418233
9	97093	405599	417744
8	97086	405092	417252
7	97079	404586	416761
6	97072	404081	416271
5	97065	403578	415782
4	97058	403075	415295
3	97051	402574	414809
2	97044	402074	414323
1	97037	401576	413839
0	97030	401078	413355

8	24418	25180	103121
9	24446	25211	103129
10	24474	25242	103137
11	24503	25273	103144
12	24531	25304	103152
13	24559	25335	103159
14	24587	25366	103167
15	24615	25397	103175
16	24644	25428	103182
17	24672	25459	103190
18	24700	25490	103197
19	24728	25521	103205
20	24756	25552	103213
21	24784	25583	103220
22	24813	25614	103228
23	24841	25645	103236
24	24869	25676	103244
25	24897	25707	103251
26	24925	25738	103259
27	24953	25769	103267
28	24982	25800	103275
29	25010	25831	103282
30	25038	25862	103290

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	97023	400582	412875
58	97015	400086	412394
57	97008	399591	411915
56	97001	399099	411437
55	96994	398607	410960
54	96987	398117	410484
53	96980	397627	410009
52	96973	397139	409535
51	96966	396651	409063
50	96959	396165	408591
49	96952	395680	408121
48	96945	395196	407652
47	96937	394713	407184
46	96930	394232	406717
45	96923	393751	406251
44	96916	393271	405786
43	96909	392793	405322
42	96902	392316	404860
41	96894	391839	404398
40	96887	391364	403938
39	96880	390890	403479
38	96873	390417	403020
37	96866	389945	402563
36	96858	389474	402107
35	96851	389004	401652
34	96844	388536	401198
33	96837	388068	400745
32	96829	387601	400293
31	96822	387136	399843
30	96815	386671	399393

4	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	25066	25893	103298
2	25094	25924	103305
3	25122	25955	103313
4	25151	25986	103321
5	25179	26017	103329
6	25207	26048	103337
7	25235	26079	103345
8	25263	26110	103353
9	25291	26141	103360
10	25320	26172	103368
11	25348	26203	103376
12	25376	26235	103384
13	25404	26266	103392
14	25432	26297	103400
15	25460	26328	103408
16	25488	26359	103416
17	25516	26390	103424
18	25545	26421	103431
19	25573	26452	103439
20	25601	26483	103447
21	25629	26515	103455
22	25657	26546	103463
23	25685	26577	103471
24	25713	26608	103479
25	25741	26639	103487
26	25769	26670	103495
27	25798	26701	103503
28	25826	26733	103511
29	25854	26764	103520
30	25882	26795	103528

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	96807	386208	398944
28	96800	385745	398497
27	96793	385284	398050
26	96786	384824	397604
25	96778	384364	397160
24	96771	383906	396716
23	96764	383449	396274
22	96756	382992	395832
21	96749	382537	395392
20	96742	382083	394952
19	96734	381630	394514
18	96727	381177	394076
17	96719	380726	393640
16	96712	380276	393204
15	96705	379827	392770
14	96697	379378	392337
13	96690	378931	391904
12	96682	378485	391473
11	96675	378040	391042
10	96667	377595	390612
9	96660	377152	390184
8	96653	376709	389756
7	96645	376268	389330
6	96638	375828	388904
5	96630	375388	388479
4	96623	374950	388056
3	96615	374512	387633
2	96608	374075	387211
1	96600	373640	386790
0	96593	373205	386370

<i>Angulus</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	25910	26826	103536
2	25938	26857	103544
3	25966	26888	103552
4	25994	26920	103560
5	26022	26951	103568
6	26050	26982	103576
7	26077	27013	103584
8	26107	27044	103592
9	26135	27076	103601
10	26163	27107	103609
11	26191	27138	103617
12	26219	27169	103625
13	26247	27201	103633
14	26275	27232	103642
15	26303	27263	103650
16	26331	27294	103658
17	26359	27326	103666
18	26387	27357	103674
19	26415	27388	103683
20	26443	27419	103691
21	26471	27451	103699
22	26500	27482	103709
23	26528	27513	103716
24	26556	27545	103724
25	26584	27576	103732
26	26612	27607	103741
27	26640	27638	103749
28	26668	27670	103757
29	26696	27701	103766
30	26724	27732	103774

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
9	96585	372771	385951
8	96577	372338	385533
7	96570	371907	385116
6	96562	371476	384700
5	96555	371046	384285
4	96547	370616	383871
3	96540	370188	383457
2	96532	369761	383045
1	96524	369335	382633
0	96517	368909	382223
9	96509	368485	381813
8	96502	368061	381404
7	96494	367638	380996
6	96486	367217	380589
5	96479	366796	380183
4	96471	366376	379778
3	96463	365957	379374
2	96456	365534	378970
1	96448	365121	378568
0	96440	364705	378166
9	96433	364289	377765
8	96425	363874	377365
7	96417	363461	376966
6	96410	363048	376568
5	96402	362636	376171
4	96394	362224	375775
3	96386	361814	375379
2	96379	361405	374984
1	96371	360996	374591
0	96363	360588	374198

15	Sinus	Tangens	Secans
31	26752	27764	10378
32	26780	27795	10379
33	26808	27826	10379
34	26836	27858	10380
35	26864	27889	10381
36	26892	27920	10382
37	26920	27952	10383
38	26948	27983	10384
39	26976	28015	10385
40	27004	28046	10385
41	27031	28077	10386
42	27060	28109	10387
43	27088	28140	10388
44	27116	28172	10389
45	27144	28203	10390
46	27172	28234	10390
47	27200	28266	10391
48	27228	28297	10392
49	27256	28329	10393
50	27284	28360	10394
51	27312	28391	10395
52	27340	28423	10396
53	27368	28454	10396
54	27396	28486	10397
55	27424	28517	10398
56	27452	28549	10399
57	27480	28580	10400
58	27508	28612	10401
59	27536	28643	10402
60	27564	28675	10403

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	96355	360181	373806
28	96347	359775	373414
27	96340	359370	373024
26	96332	358966	372635
25	96324	358562	372246
24	96316	358160	371858
23	96308	357758	371471
22	96301	357357	371085
21	96293	356957	370700
20	96285	356557	370315
19	96277	356159	369931
18	96269	355761	369549
17	96261	355364	369167
16	96253	354968	368785
15	96246	354573	368405
14	96238	354179	368025
13	96230	353785	367647
12	96222	353393	367269
11	96214	353001	366892
10	96206	352609	366515
9	96198	352219	366140
8	96190	351829	365765
7	96182	351441	365391
6	96174	351053	365018
5	96166	350666	364645
4	96158	350279	364274
3	96150	349894	363903
2	96142	349509	363533
1	96134	349125	363164
0	96126	348741	362796

16	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	27592	28706	104039
2	27620	28738	104047
3	27648	28769	104056
4	27676	28800	104065
5	27704	28832	104073
6	27731	28864	104082
7	27759	28895	104091
8	27787	28927	104100
9	27815	28958	104108
10	27843	28990	104117
11	27871	29021	104126
12	27899	29053	104135
13	27927	29084	104144
14	27955	29116	104152
15	27983	29147	104161
16	28011	29179	104170
17	28039	29210	104179
18	28067	29242	104188
19	28095	29274	104197
20	28122	29305	104206
21	28150	29337	104214
22	28178	29368	104223
23	28206	29400	104232
24	28234	29432	104241
25	28262	29463	104250
26	28290	29495	104259
27	28318	29526	104268
28	28346	29558	104277
29	28374	29590	104286
30	28402	29621	104295

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	96118	348359	362428
58	96110	347977	362061
57	96102	347596	361695
56	96094	347216	361330
55	96086	346837	360965
54	96078	346458	360601
53	96070	346080	360238
52	96062	345703	359876
51	96054	345327	359514
50	96046	344951	359154
49	96037	344576	358794
48	96029	344202	358434
47	96021	343829	358076
46	96013	343456	357718
45	96005	343084	357361
44	95997	342713	357005
43	95989	342343	356649
42	95981	341973	356294
41	95972	341604	355940
40	95964	341236	355587
39	95956	340869	355234
38	95948	340502	354883
37	95940	340136	354531
36	95931	339771	354181
35	95923	339406	353831
34	95915	339042	353482
33	95907	338679	353134
32	95898	338317	352787
31	95890	337955	352440
30	95882	337594	352094

16	<i>Sinus</i>	<i>Tangens</i>	<i>Secant</i>
31	28429	29653	104304
32	28457	29685	104313
33	28485	29716	104322
34	28513	29748	104331
35	28541	29780	104340
36	28569	29811	104349
37	28597	29843	104358
38	28625	29875	104367
39	28652	29906	104376
40	28680	29938	104385
41	28708	29970	104394
42	28736	30001	104403
43	28764	30033	104413
44	28792	30065	104422
45	28820	30097	104431
46	28847	30128	104440
47	28875	30160	104449
48	28903	30192	104458
49	28931	30224	104468
50	28959	30255	104477
51	28987	30287	104486
52	29015	30319	104495
53	29042	30351	104504
54	29070	30382	104514
55	29098	30414	104523
56	29126	30446	104532
57	29154	30478	104541
58	29182	30509	104551
59	29209	30541	104560
60	29237	30573	104569

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	95874	337234	351748
28	95865	336875	351404
27	95857	336515	351060
26	95849	336158	350716
25	95841	335800	350374
24	95832	335443	350032
23	95824	335087	349691
22	95816	334732	349350
21	95807	334377	349010
20	95799	334023	348671
19	95791	333670	348333
18	95782	333317	347995
17	95774	332965	347658
16	95766	332614	347321
15	95757	332264	346986
14	95749	331914	346651
13	95740	331565	346316
12	95732	331216	345983
11	95724	330868	345650
10	95715	330521	345317
9	95707	330174	344986
8	95698	329829	344655
7	95690	329483	344324
6	95681	329139	343995
5	95673	328795	343666
4	95664	328452	343337
3	95656	328109	343010
2	95647	327767	342683
1	95639	327426	342356
0	95630	327085	342030

7	29432	30795	104635
8	29460	30828	104644
9	29487	30860	104653
10	29515	30891	104663
11	29543	30923	104672
12	29571	30955	104682
13	29599	30987	104691
14	29626	31019	104700
15	29654	31051	104710
16	29682	31083	104719
17	29710	31115	104729
18	29737	31147	104738
19	29765	31178	104748
20	29793	31210	104757
21	29821	31242	104767
22	29849	31274	104776
23	29876	31306	104786
24	29904	31338	104795
25	29932	31370	104805
26	29960	31402	104815
27	29987	31434	104824
28	30015	31466	104834
29	30043	31498	104843
30	30071	31530	104853

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	95622	326745	341705
58	95613	326406	341381
57	95605	326067	341057
56	95596	325729	340734
55	95588	325392	340411
54	95579	325055	340089
53	95571	324719	339768
52	95562	324383	339448
51	95554	324049	339128
50	95545	323714	338808
49	95536	323381	338489
48	95528	323048	338171
47	95519	322715	337854
46	95511	322384	337537
45	95502	322053	337221
44	95493	321722	336905
43	95485	321392	336590
42	95476	321063	336276
41	95467	320734	335962
40	95459	320406	335649
39	95450	320079	335336
38	95441	319752	335025
37	95433	319426	334713
36	95424	319100	334403
35	95415	318775	334092
34	95407	318451	333783
33	95398	318127	333474
32	95389	317804	333166
31	95380	317481	332858
30	95372	317159	332551

$\frac{1}{2}$ 7	Sinus	Tangens	Secans
31	30098	31562	104863
32	30126	31594	104872
33	30154	31626	104882
34	30182	31658	104891
35	30209	31690	104901
36	30237	31722	104911
37	30265	31754	104920
38	30292	31786	104930
39	30320	31818	104940
40	30348	31850	104950
41	30376	31882	104959
42	30403	31914	104969
43	30431	31946	104979
44	30459	31978	104989
45	30486	32010	104998
46	30514	32042	105008
47	30542	32074	105018
48	30570	32106	105028
49	30597	32139	105038
50	30625	32171	105047
51	30653	32203	105057
52	30680	32235	105067
53	30708	32267	105077
54	30736	32299	105087
55	30763	32331	105097
56	30791	32363	105106
57	30819	32396	105116
58	30846	32428	105126
59	30874	32460	105136
60	30902	32492	105146

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	95363	316838	332244
28	95354	316517	331939
27	95345	316197	331633
26	95337	315877	331328
25	95328	315558	331024
24	95319	315240	330721
23	95310	314922	330418
22	95301	314605	330115
21	95293	314288	329814
20	95284	313972	329512
19	95275	313656	329212
18	95266	313341	328912
17	95257	313027	328612
16	95248	312713	328313
15	95240	312400	328015
14	95231	312087	327717
13	95222	311776	327420
12	95213	311464	327123
11	95204	311153	326827
10	95195	310842	326531
9	95186	310532	326237
8	95177	310223	325942
7	95168	309914	325648
6	95159	309606	325355
5	95150	309298	325062
4	95142	308991	324770
3	95133	308685	324478
2	95124	308378	324187
1	95115	308073	323897
0	95106	307768	323607

18	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	30929	32524	10515
2	30957	32556	10516
3	30985	32588	10517
4	31012	32621	10518
5	31040	32653	10519
6	31068	32685	10520
7	31095	32717	10521
8	31123	32749	10522
9	31151	32782	10523
10	31178	32814	10524
11	31206	32846	10525
12	31233	32878	10526
13	31261	32911	10527
14	31289	32943	10528
15	31316	32975	10529
16	31344	33007	10530
17	31372	33040	10531
18	31399	33072	10532
19	31427	33104	10533
20	31454	33136	10534
21	31482	33169	10535
22	31510	33201	10536
23	31537	33233	10537
24	31565	33266	10538
25	31592	33298	10539
26	31620	33330	10540
27	31648	33363	10541
28	31675	33395	10542
29	31703	33427	10543
30	31730	33460	10544

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	95097	307464	323317
58	95088	307160	323028
57	95079	306857	322740
56	95070	306554	322452
55	95061	306252	322165
54	95052	305950	321878
53	95043	305649	321592
52	95033	305349	321306
51	95024	305049	321021
50	95015	304749	320737
49	95006	304450	320453
48	94997	304152	320169
47	94988	303854	319886
46	94979	303556	319604
45	94970	303260	319322
44	94961	302963	319040
43	94952	302667	318759
42	94943	302372	318479
41	94933	302077	318199
40	94924	301783	317920
39	94915	301489	317641
38	94906	301196	317363
37	94897	300903	317085
36	94888	300611	316808
35	94878	300319	316531
34	94869	300028	316255
33	94860	299738	315979
32	94851	299447	315704
31	94842	299158	315429
30	94832	298868	315155

8	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	31758	33492	105459
32	31786	33524	105470
33	31813	33557	105480
34	31841	33589	105490
35	31868	33621	105501
36	31896	33654	105511
37	31923	33686	105521
38	31951	33718	105532
39	31979	33751	105542
40	32006	33783	105552
41	32034	33816	105563
42	32061	33848	105573
43	32089	33881	105584
44	32116	33913	105594
45	32144	33945	105604
46	32171	33978	105615
47	32199	34010	105625
48	32227	34043	105636
49	32254	34075	105646
50	32282	34108	105657
51	32309	34140	105667
52	32337	34173	105678
53	32364	34205	105688
54	32392	34238	105699
55	32419	34270	105709
56	32447	34303	105720
57	32474	34335	105730
58	32502	34368	105741
59	32529	34400	105751
60	32557	34433	105762

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	94823	298580	314881
28	94814	298292	314608
27	94805	298004	314335
26	94795	297717	314063
25	94786	297430	313791
24	94777	297144	313520
23	94768	296858	313249
22	94758	296573	312979
21	94749	296288	312709
20	94740	296004	312440
19	94730	295720	312171
18	94721	295437	311903
17	94712	295155	311635
16	94702	294872	311367
15	94693	294590	311100
14	94684	294309	310834
13	94674	294028	310568
12	94665	293748	310303
11	94656	293468	310038
10	94646	293189	309774
9	94637	292910	309510
8	94627	292632	309246
7	94618	292354	308983
6	94609	292076	308721
5	94599	291799	308459
4	94590	291523	308197
3	94580	291246	307936
2	94571	290971	307675
1	94561	290696	307415
0	94552	290421	307155

19	Sinus	Tangens	Secans
1	32584	34465	105773
2	32612	34498	105783
3	32639	34530	105794
4	32667	34563	105805
5	32694	34596	105815
6	32722	34628	105826
7	32749	34661	105836
8	32777	34693	105847
9	32804	34726	105858
10	32832	34758	105869
11	32859	34791	105879
12	32887	34824	105890
13	32914	34856	105901
14	32942	34889	105911
15	32969	34922	105922
16	32997	34954	105933
17	33024	34987	105944
18	33051	35019	105955
19	33079	35052	105965
20	33106	35085	105976
21	33134	35117	105987
22	33161	35150	105998
23	33189	35183	106009
24	33216	35216	106019
25	33244	35248	106030
26	33271	35281	106041
27	33298	35314	106052
28	33326	35346	106063
29	33353	35379	106074
30	33381	35412	106085

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	94542	290147	306896
58	94533	289873	306637
57	94523	289600	306379
56	94514	289327	306121
55	94504	289055	305864
54	94495	288783	305607
53	94485	288511	305350
52	94476	288240	305094
51	94466	287970	304839
50	94457	287700	304584
49	94447	287430	304329
48	94438	287161	304075
47	94428	286892	303821
46	94418	286624	303568
45	94409	286356	303315
44	94399	286089	303062
43	94390	285822	302810
42	94380	285555	302559
41	94370	285289	302308
40	94361	285023	302057
39	94351	284758	301807
38	94342	284494	301557
37	94332	284229	301308
36	94322	283965	301059
35	94313	283702	300810
34	94303	283439	300562
33	94293	283176	300315
32	94284	282914	300067
31	94274	282653	299821
30	94264	282391	299574

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19	Sinns	Tangens	Secans
31	33408	35445	106096
32	33436	35477	106107
33	33463	35510	106118
34	33490	35543	106129
35	33518	35576	106140
36	33545	35608	106151
37	33573	35641	106162
38	33600	35674	106173
39	33627	35707	106184
40	33655	35740	106195
41	33682	35772	106206
42	33710	35805	106217
43	33737	35838	106228
44	33764	35871	106239
45	33792	35904	106250
46	33819	35937	106261
47	33846	35969	106272
48	33874	36002	106283
49	33901	36035	106295
50	33929	36068	106306
51	33956	36101	106317
52	33983	36134	106328
53	34011	36167	106339
54	34038	36199	106350
55	34065	36232	106362
56	34093	36265	106373
57	34120	36298	106384
58	34147	36331	106395
59	34175	36364	106407
60	34202	36397	106418

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	94254	282130	299329
28	94245	281870	299083
27	94235	281610	298838
26	94225	281350	298594
25	94215	281091	298349
24	94206	280833	298106
23	94196	280574	297862
22	94186	280316	297619
21	94176	280059	297377
20	94167	279802	297135
19	94157	279545	296893
18	94147	279289	296652
17	94137	279033	296411
16	94127	278778	296171
15	94118	278523	295931
14	94108	278269	295691
13	94098	278014	295452
12	94088	277761	295213
11	94078	277507	294975
10	94068	277254	294737
9	94058	277002	294500
8	94049	276750	294263
7	94039	276498	294026
6	94029	276247	293790
5	94019	275996	293554
4	94009	275746	293318
3	93999	275495	293083
2	93989	275246	292849
1	93979	274997	292614
0	93969	274748	292380

20	Sinus	Tangens	Secans
1	34229	36430	106429
2	34257	36463	106441
3	34284	36496	106452
4	34311	36529	106463
5	34339	36562	106474
6	34366	36595	106486
7	34393	36628	106497
8	34421	36661	106508
9	34448	36694	106520
10	34475	36727	106531
11	34503	36760	106542
12	34530	36793	106554
13	34557	36826	106565
14	34584	36859	106577
15	34612	36892	106588
16	34639	36925	106600
17	34666	36958	106611
18	34694	36991	106622
19	34721	37024	106634
20	34748	37057	106645
21	34775	37090	106657
22	34803	37123	106668
23	34830	37157	106680
24	34857	37190	106691
25	34884	37223	106703
26	34912	37256	106715
27	34939	37289	106726
28	34966	37322	106738
29	34993	37355	106749
30	35021	37388	106761

	<i>Sinus</i>	<i>Tangens</i>	<i>Secan</i>
59	93959	274499	2921
58	93949	274251	2919
57	93939	274004	2916
56	93929	273756	2914
55	93919	273509	2912
54	93909	273263	2909
53	93899	273017	2907
52	93889	272771	2905
51	93879	272526	2902
50	93869	272281	2900
49	93859	272036	2898
48	93849	271792	2896
47	93839	271548	2893
46	93829	271305	2891
45	93819	271062	2889
44	93809	270818	2886
43	93799	270577	2884
42	93789	270335	2882
41	93779	270094	2880
40	93769	269853	2877
39	93759	269612	2875
38	93748	269371	2873
37	93738	269131	2871
36	93728	268892	2868
35	93718	268653	2866
34	93708	268414	2864
33	93698	268175	2862
32	93688	267937	2859
31	93677	267700	2857
30	93667	267462	2855

20	Sinus	Tangens	Secans
31	35048	37422	106793
32	35075	37455	106784
33	35102	37488	106796
34	35130	37521	106807
35	35157	37554	106819
36	35184	37588	106831
37	35211	37621	106842
38	35239	37654	106854
39	35266	37687	106866
40	35293	37720	106878
41	35320	37754	106889
42	35347	37787	106901
43	35375	37820	106913
44	35402	37853	106925
45	35429	37887	106936
46	35456	37920	106948
47	35483	37953	106960
48	35511	37986	106972
49	35538	38020	106984
50	35565	38053	106995
51	35592	38086	107007
52	35619	38120	107019
53	35647	38153	107031
54	35674	38186	107043
55	35701	38220	107055
56	35728	38253	107067
57	35755	38286	107079
58	35782	38320	107091
59	35810	38353	107103
60	35837	38386	107114

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
28	93657	267225	285323
28	93647	266989	285102
27	93637	266752	284880
26	93626	266516	284659
25	93616	266281	284439
24	93606	266046	284219
23	93596	265811	283999
22	93585	265576	283780
21	93575	265342	283561
20	93565	265109	283342
19	93555	264875	283124
18	93544	264642	282906
17	93534	264410	282688
16	93524	264177	282471
15	93514	263945	282254
14	93503	263714	282037
13	93493	263483	281821
12	93483	263252	281605
11	93472	263021	281390
10	93462	262791	281175
9	93452	262561	280960
8	93441	262332	280746
7	93431	262103	280531
6	93420	261874	280318
5	93410	261646	280104
4	93400	261418	279891
3	93389	261190	279679
2	93379	260963	279466
1	93368	260736	279254
0	93359	260509	279043

21	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	35864	38420	107126
2	35891	38453	107138
3	35918	38487	107150
4	35945	38520	107162
5	35973	38553	107174
6	36000	38587	107186
7	36027	38620	107199
8	36054	38654	107211
9	36081	38687	107223
10	36108	38721	107235
11	36135	38754	107247
12	36162	38787	107259
13	36190	38821	107271
14	36217	38854	107283
15	36244	38888	107295
16	36271	38921	107307
17	36298	38955	107320
18	36325	38988	107332
19	36352	39022	107344
20	36379	39055	107356
21	36406	39089	107368
22	36434	39122	107380
23	36461	39156	107393
24	36488	39190	107405
25	36515	39223	107417
26	36542	39257	107429
27	36569	39290	107442
28	36596	39324	107454
29	36623	39357	107466
30	36650	39391	107479

Sinus

Tangens

Secans

59	93348	260283	278832
58	93337	260057	278621
57	93327	259831	278410
56	93316	259606	278200
55	93306	259381	277990
54	93295	259156	277780
53	93285	258932	277571
52	93274	258708	277362
51	93264	258484	277154
50	93253	258261	276945
49	93243	258038	276737
48	93232	257815	276530
47	93222	257593	276323
46	93211	257372	276116
45	93201	257150	275909
44	93190	256928	275703
43	93180	256707	275497
42	93169	256487	275292
41	93159	256266	275086
40	93148	256046	274881
39	93137	255827	274677
38	93127	255608	274473
37	93116	255389	274269
36	93106	255170	274065
35	93095	254952	273862
34	93084	254734	273659
33	93074	254516	273456
32	93063	254299	273254
31	93052	254082	273052
30	93042	253865	272850

21	Sinus	Tangens	Secans
31	36677	39425	107491
32	36704	39458	107503
33	36731	39492	107516
34	36758	39526	107528
35	36785	39559	107540
36	36812	39593	107553
37	36839	39626	107565
38	36867	39660	107578
39	36894	39694	107590
40	36921	39727	107602
41	36948	39761	107615
42	36975	39795	107627
43	37002	39829	107640
44	37029	39862	107652
45	37056	39896	107665
46	37083	39930	107677
47	37110	39963	107690
48	37137	39997	107702
49	37164	40031	107715
50	37191	40065	107727
51	37218	40098	107740
52	37245	40132	107752
53	37272	40166	107765
54	37299	40200	107778
55	37326	40234	107790
56	37353	40267	107803
57	37380	40301	107815
58	37407	40335	107828
59	37434	40369	107841
60	37461	40403	107853



	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	93031	253648	272649
28	93020	253432	272448
27	93010	253217	27224
26	92999	253001	272047
25	92988	252786	271847
24	92979	252571	271647
23	92967	252357	271448
22	92956	252142	271249
21	92945	251929	271050
20	92935	251715	27085
19	92924	251502	27065
18	92913	251289	27045
17	92902	251076	27025
16	92892	250864	27006
15	92881	250652	26986
14	92870	250441	26966
13	92859	250229	26947
12	92849	250018	26927
11	92838	249807	26907
10	92827	249597	26888
9	92816	249386	26868
8	92805	249177	26849
7	92794	248967	26829
6	92784	248758	26810
5	92773	248549	26791
4	92762	248340	26771
3	92751	248132	26752
2	92740	247924	26733
1	92729	247716	26713
0	92718	247509	26694

22	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	37488	40436	107866
2	37515	40470	107879
3	37542	40504	107892
4	37569	40538	107904
5	37595	40572	107917
6	37622	40606	107930
7	37649	40640	107942
8	37676	40674	107955
9	37703	40707	107968
10	37730	40741	107981
11	37757	40775	107994
12	37784	40809	108006
13	37811	40843	108019
14	37838	40877	108032
15	37865	40911	108045
16	37892	40945	108058
17	37919	40979	108071
18	37946	41013	108084
19	37973	41047	108096
20	37999	41081	108109
21	38026	41115	108122
22	38053	41149	108135
23	38080	41183	108148
24	38107	41217	108161
25	38134	41251	108174
26	38161	41285	108187
27	38188	41319	108200
28	38215	41353	108213
29	38241	41387	108226
30	38268	41421	108239

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	92707	247302	266755
58	92697	247095	266563
57	92886	246888	266371
56	92675	246682	266180
55	92664	246476	265989
54	92653	246270	265799
53	92642	246065	265609
52	92631	245860	265419
51	92620	245655	265229
50	92609	245451	265040
49	92598	245246	264851
48	92587	245043	264662
47	92576	244839	264473
46	92565	244636	264285
45	92554	244433	264097
44	92543	244230	263909
43	92532	244027	263722
42	92521	243825	263535
41	92510	243623	263348
40	92499	243422	263162
39	92488	243220	262976
38	92477	243019	262790
37	92466	242819	262604
36	92455	242618	262419
35	92444	242418	262234
34	92432	242218	262049
33	92421	242019	261864
32	92410	241819	261680
31	92399	241620	261496
30	92388	241421	261313

22	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	38295	41455	108252
32	38322	41490	108265
33	38349	41 24	108278
34	38376	41558	108291
35	38403	41592	108305
36	38430	41626	108318
37	38456	41660	108331
38	38483	41694	108344
39	38510	41728	108357
40	38537	41763	108370
41	38564	41797	108383
42	38591	41831	108397
43	38617	41865	108410
44	38644	41899	108423
45	38671	41933	108436
46	38698	41968	108449
47	38725	42002	108463
48	38752	42036	108476
49	38778	42070	108489
50	38805	42105	108503
51	38832	42139	108516
52	38859	42173	108529
53	38886	42207	108542
54	38912	42242	108556
55	38939	42276	108569
56	38966	42310	108582
57	38993	42345	108596
58	39020	42379	108609
59	39046	42413	108623
60	39073	42447	108636

	<i>Sines</i>	<i>Tangens</i>	<i>Secans</i>
29	92377	241223	261129
28	92366	241025	260946
27	92355	240827	260763
26	92343	240629	260581
25	92332	240432	260399
24	92321	240235	260217
23	92310	240038	260035
22	92299	239841	259853
21	92287	239645	259672
20	92276	239449	259491
19	92265	239253	259311
18	92254	239058	259130
17	92243	238862	258950
16	92231	238668	258771
15	92220	238472	258591
14	92209	238279	258412
13	92197	238084	258233
12	92186	237891	258054
11	92175	237697	257876
10	92164	237504	257698
9	92152	237311	257520
8	92141	237118	257342
7	92130	236925	257165
6	92119	236733	256988
5	92107	236541	256811
4	92096	236349	256634
3	92085	236158	256458
2	92073	235967	256282
1	92062	235776	256106
0	92050	235585	255930

23	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	39099	42482	108649
2	39127	42516	108663
3	39153	42551	108676
4	39180	42585	108690
5	39207	42619	108703
6	39234	42654	108717
7	39260	42688	108730
8	39287	42722	108744
9	39314	42757	108757
10	39341	42791	108771
11	39367	42826	108784
12	39394	42860	108798
13	39421	42894	108811
14	39448	42929	108825
15	39474	42963	108839
16	39501	42998	108852
17	39528	43032	108866
18	39555	43067	108880
19	39581	43101	108893
20	39608	43136	108907
21	39635	43170	108920
22	39661	43205	108934
23	39688	43239	108948
24	39715	43274	108962
25	39741	43308	108975
26	39768	43343	108989
27	39795	43378	109003
28	39822	43412	109017
29	39848	43447	109030
30	39875	43481	109044

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	92039	235395	255755
58	92028	235205	255580
57	92016	235015	255405
56	92005	234825	255231
55	91994	234636	255057
54	91982	234447	254883
53	91971	234258	254709
52	91959	234069	254536
51	91948	233881	254363
50	91936	233693	254190
49	91925	233505	254017
48	91914	233317	253845
47	91902	233130	253672
46	91891	233943	253500
45	91879	233756	253329
44	91868	233570	253157
43	91856	232383	252986
42	91845	232197	252815
41	91833	232012	252645
40	91822	231826	252474
39	91810	231640	252304
38	91799	231456	252134
37	91787	231271	251965
36	91775	231086	251795
35	91764	230902	251626
34	91752	230718	251457
33	91741	230534	251289
32	91729	230351	251120
31	91718	230167	250952
30	91706	229984	250784
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23	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	39902	43516	109058
32	39928	43550	109072
33	39955	43585	109086
34	39982	43620	109099
35	40008	43654	109113
36	40035	43689	109127
37	40062	43724	109141
38	40088	43758	109155
39	40115	43793	109169
40	40141	43828	109183
41	40168	43862	109197
42	40195	43897	109211
43	40221	43932	109224
44	40248	43966	109238
45	40275	44001	109252
46	40301	44036	109266
47	40328	44071	109280
48	40355	44105	109294
49	40381	44140	109308
50	40408	44175	109322
51	40434	44210	109337
52	40461	44244	109351
53	40488	44279	109365
54	40514	44314	109379
55	40541	44349	109393
56	40567	44384	109407
57	40594	44418	109421
58	40621	44453	109435
59	40647	44488	109449
60	40674	44523	109464

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	91694	229801	250617
28	91683	229619	250449
27	91671	229437	250282
26	91660	229254	250115
25	91648	229073	249948
24	91636	228891	249782
23	91625	228710	249616
22	91613	228528	249450
21	91601	228348	249284
20	91590	228167	249119
19	91578	227987	248954
18	91566	227806	248789
17	91555	227626	248624
16	91543	227447	248459
15	91531	227267	248295
14	91519	227088	248131
13	91508	226909	247967
12	91496	226730	247804
11	91484	226552	247640
10	91472	226374	247477
9	91461	226196	247314
8	91449	226018	247152
7	91437	225840	246989
6	91425	225663	246827
5	91414	225486	246665
4	91402	225309	246504
3	91390	225132	246342
2	91378	224956	246181
1	91366	224780	246020
0	91355	224604	245859

24	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	40700	44558	109478
2	40727	44593	109492
3	40753	44627	109506
4	40780	44662	109520
5	40806	44687	109535
6	40833	44732	109549
7	40860	44767	109563
8	40886	44802	109577
9	40913	44837	109592
10	40939	44872	109606
11	40966	44907	109620
12	40992	44942	109635
13	41019	44977	109649
14	41045	45012	109663
15	41072	45047	109678
16	41098	45082	109692
17	41125	45117	109706
18	41151	45152	109721
19	41178	45187	109735
20	41204	45222	109750
21	41231	45257	109764
22	41257	45292	109779
23	41284	45327	109793
24	41310	45362	109808
25	41337	45397	109822
26	41363	45432	109837
27	41390	45467	109851
28	41416	45502	109866
29	41443	45537	109880
30	41469	45573	109895

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	91343	224428	245699
58	91331	224252	245539
57	91319	224077	245378
56	91307	223902	245219
55	91295	223727	245059
54	91283	223553	244900
53	91272	223378	244741
52	91260	223204	244582
51	91248	223030	244423
50	91236	222857	244264
49	91224	222683	244106
48	91212	222510	243948
47	91200	222337	243790
46	91188	222164	243633
45	91176	221992	243476
44	91164	221819	243318
43	91152	221647	243162
42	91140	221475	243005
41	91128	221304	242848
40	91116	221132	242692
39	91104	220961	242536
38	91092	220790	242380
37	91080	220619	242225
36	91068	220449	242070
35	91056	220278	241914
34	91044	220108	241760
33	91031	219938	241605
32	91020	219769	241450
31	91008	219599	241296
30	90996	219430	241142

24	Sinus	Tangens	Secans
31	41496	45608	109909
32	41522	45643	109924
33	41549	45678	109939
34	41575	45713	109953
35	41602	45748	109968
36	41628	45784	109982
37	41655	45819	109997
38	41681	45854	110012
39	41707	45889	110026
40	41734	45924	110041
41	41760	45960	110056
42	41787	45995	110071
43	41813	46030	110085
44	41840	46065	110100
45	41866	46100	110115
46	41892	46136	110130
47	41919	46171	110144
48	41945	46206	110159
49	41972	46242	110174
50	41998	46277	110189
51	42024	46312	110204
52	42051	46348	110218
53	42077	46383	110233
54	42104	46418	110248
55	42130	46454	110263
56	42156	46489	110278
57	42183	46525	110293
58	42209	46560	110308
59	42235	46595	110323
60	42262	46631	110338

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	90984	219261	240988
28	90972	219092	240835
27	90950	218923	240681
26	90948	218755	240528
25	90936	218587	240375
24	90924	218419	240222
23	90911	218251	240070
22	90899	218084	239918
21	90887	217916	239766
20	90875	217749	239614
19	90863	217582	239462
18	90851	217416	239311
17	90839	217249	239159
16	90826	217083	239008
15	90814	216917	238857
14	90802	216751	238707
13	90790	216585	238556
12	90778	216420	238406
11	90766	216255	238256
10	90753	216090	238106
9	90741	215925	237957
8	90729	215760	237808
7	90717	215596	237658
6	90704	215432	237509
5	90692	215268	237361
4	90680	215104	237212
3	90668	214940	237064
2	90655	214777	236916
1	90643	214614	236768
0	90631	214451	236620
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<i>S</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	42288	46666	110353
2	42315	46702	110368
3	42341	46737	110383
4	42367	46772	110398
5	42394	46808	110413
6	42420	46843	110428
7	42446	46879	110443
8	42473	46914	110458
9	42499	46950	110473
10	42525	46985	110488
11	42552	47021	110503
12	42578	47056	110518
13	42604	47092	110533
14	42631	47128	110549
15	42657	47163	110564
16	42683	47199	110579
17	42709	47234	110594
18	42736	47270	110609
19	42762	47305	110625
20	42788	47341	110640
21	42815	47377	110655
22	42841	47412	110670
23	42867	47448	110686
24	42894	47483	110701
25	42920	47519	110716
26	42946	47555	110731
27	42972	47590	110747
28	42999	47626	110762
29	43025	47662	110777
30	43051	47698	110793

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	90618	214288	236473
58	90606	214125	236325
57	90594	213963	236178
56	90582	213801	236031
55	90569	213639	235885
54	90557	213477	235738
53	90545	213316	235592
52	90532	213154	235446
51	90520	212993	235300
50	90507	212832	235154
49	90495	212671	235009
48	90482	212511	234863
47	90470	212350	234718
46	90458	212190	234573
45	90446	212030	234429
44	90433	211871	234284
43	90421	211711	234140
42	90408	211552	233996
41	90396	211392	233852
40	90383	211233	233708
39	90371	211075	233565
38	90358	210916	233422
37	90346	210758	233278
36	90334	210600	233135
35	90321	210441	232993
34	90309	210284	232850
33	90296	210126	232708
32	90284	209969	232566
31	90271	209811	232424
30	90259	209654	232282

25	Sinus	Tangens	Secans
31	43077	47733	110808
32	43104	47769	110824
33	43130	47805	110839
34	43156	47840	110854
35	43182	47876	110870
36	43209	47912	110885
37	43235	47948	110901
38	43261	47984	110916
39	43287	48019	110932
40	43313	48055	110947
41	43340	48091	110963
42	43366	48127	110978
43	43392	48163	110994
44	43418	48198	111009
45	43445	48234	111025
46	43471	48270	111041
47	43497	48306	111056
48	43523	48342	111072
49	43549	48378	111087
50	43575	48414	111103
51	43602	48450	111119
52	43628	48486	111134
53	43654	48521	111150
54	43680	48557	111166
55	43706	48593	111181
56	43733	48629	111197
57	43759	48665	111213
58	43785	48701	111229
59	43811	48737	111244
60	43837	48773	111260

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	90246	209498	232140
28	90233	209341	231999
27	90221	209184	231858
26	90208	209028	231717
25	90196	208872	231576
24	90183	208716	231436
23	90171	208560	231295
22	90158	208405	231155
21	90146	208250	231015
20	90133	208094	230875
19	90120	207939	230735
18	90108	207785	230596
17	90095	207630	230457
16	90082	207476	230318
15	90070	207321	230179
14	90057	207167	230040
13	90045	207014	229901
12	90032	206860	229763
11	90019	206706	229625
10	90007	206553	229487
9	89994	206400	229349
8	89981	206247	229211
7	89968	206094	229074
6	89956	205942	228937
5	89943	205789	228800
4	89930	205637	228663
3	89918	205485	228526
2	89905	205333	228390
1	89892	205182	228253
0	89879	205030	228117

16	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	43863	48809	111276
2	43889	48845	111292
3	43916	48881	111308
4	43942	48917	111323
5	43968	48953	111339
6	43994	48989	111355
7	44020	49026	111371
8	44046	49062	111387
9	44072	49098	111403
0	44098	49134	111419
1	44124	49170	111435
2	44151	49206	111451
3	44177	49242	111467
4	44203	49278	111483
5	44229	49315	111499
6	44255	49351	111515
7	44281	49387	111531
8	44307	49423	111547
9	44333	49459	111563
0	44359	49495	111579
1	44385	49532	111595
2	44411	49568	111611
3	44437	49604	111627
4	44464	49640	111643
5	44490	49677	111659
6	44516	49713	111675
7	44542	49749	111691
8	44568	49786	111708
9	44594	49822	111724
0	44620	49858	111740

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	89867	204879	227981
58	89854	204728	227845
57	89841	204577	227710
56	89828	204426	227574
55	89816	204276	227439
54	89803	204125	227304
53	89790	203975	227169
52	89777	203825	227035
51	89764	203675	226900
50	89751	203526	226766
49	89739	203376	226632
48	89726	203227	226498
47	89713	203078	226364
46	89700	202929	226230
45	89687	202780	226097
44	89674	202631	225963
43	89662	202483	225830
42	89649	202335	225697
41	89636	202187	225565
40	89623	202039	225432
39	89610	201891	225300
38	89597	201743	225167
37	89584	201596	225035
36	89571	201449	224903
35	89558	201302	224772
34	89545	201155	224640
33	89532	201008	224509
32	89519	200862	224378
31	89506	200715	224247
30	89493	200569	224116

26	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	44646	49894	111756
32	44672	49931	111772
33	44698	49967	111789
34	44724	50004	111805
35	44750	50040	111821
36	44776	50076	111838
37	44802	50113	111854
38	44828	50149	111870
39	44854	50185	111886
40	44880	50222	111903
41	44906	50258	111919
42	44932	50295	111936
43	44958	50331	111952
44	44984	50368	111968
45	45010	50404	111985
46	45036	50441	112001
47	45062	50477	112018
48	45088	50514	112034
49	45114	50550	112051
50	45140	50587	112067
51	45166	50623	112083
52	45192	50660	112100
53	45218	50696	112117
54	45243	50733	112133
55	45269	50769	112150
56	45295	50806	112166
57	45321	50843	112183
58	45347	50879	112199
59	45373	50916	112216
60	45399	50953	112233

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	89480	200423	223985
28	89467	200277	223855
27	89454	200131	223724
26	89441	199986	223594
25	89428	199841	223464
24	89415	199695	223334
23	89402	199550	223205
22	89389	199406	223075
21	89376	199261	222946
20	89363	199116	222817
19	89350	198972	222688
18	89337	198828	222559
17	89324	198684	222430
16	89311	198540	222302
15	89298	198396	222174
14	89285	198253	222045
13	89272	198110	221918
12	89259	197966	221790
11	89245	197823	221662
10	89232	197680	221535
9	89219	197538	221407
8	89206	197395	221280
7	89193	197253	221153
6	89180	197111	221026
5	89167	196969	220900
4	89153	196827	220773
3	89140	196685	220647
2	89127	196544	220521
1	89114	196402	220395
0	89101	196261	220269

17	Sinus	Tangens	Secans
1	45425	50989	112249
2	45451	51026	112266
3	45477	51063	112283
4	45503	51099	112299
5	45529	51136	112316
6	45554	51173	112333
7	45580	51209	112349
8	45606	51246	112366
9	45631	51283	112383
10	45658	51319	112400
11	45684	51356	112416
12	45710	51393	112433
13	45736	51430	112450
14	45762	51467	112467
15	45787	51503	112484
16	45813	51540	112501
17	45839	51577	112517
18	45865	51514	112534
19	45891	51651	112551
20	45917	51688	112568
21	45942	51724	112585
22	45968	51761	112602
23	45994	51798	112619
24	46020	51835	112636
25	46046	51872	112653
26	46072	51909	112670
27	46097	51946	112687
28	46123	51983	112704
29	46149	52020	112721
30	46175	52057	112738

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	89087	196120	220143
58	89074	195979	220018
57	89061	195838	219892
56	89048	195698	219767
55	89035	195557	219642
54	89021	195417	219517
53	89008	195277	219393
52	88995	195137	219268
51	88981	194997	219144
50	88968	194858	219019
49	88955	194718	218895
48	88942	194579	218771
47	88928	194440	218648
46	88915	194301	218524
45	88902	194162	218401
44	88888	194023	218277
43	88875	193885	218154
42	88862	193746	218031
41	88848	193608	217909
40	88835	193470	217786
39	88822	193332	217663
38	88808	193195	217541
37	88795	193057	217419
36	88782	192920	217297
35	88768	192782	217175
34	88755	192645	217053
33	88741	192508	216932
32	88728	192371	216810
31	88715	192235	216689
30	88701	192098	216568

27	Sinus	Tangens	Secans
31	46201	52094	112755
32	46226	52131	112772
33	46252	52168	112789
34	46278	52205	112807
35	46304	52242	112824
36	46330	52279	112841
37	46355	52316	112858
38	46381	52353	112875
39	46407	52390	112892
40	46433	52427	112910
41	46458	52464	112927
42	46484	52501	112944
43	46510	52538	112961
44	46536	52575	112979
45	46561	52613	112996
46	46587	52650	113013
47	46613	52687	113031
48	46639	52724	113048
49	46664	52761	113065
50	46690	52798	113083
51	46716	52836	113100
52	46742	52873	113117
53	46767	52910	113135
54	46793	52947	113152
55	46819	52985	113170
56	46844	53022	113187
57	46870	53059	113205
58	46896	53096	113222
59	46921	53134	113239
60	46947	53171	113257

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	88688	191962	216447
28	88674	191826	216326
27	88661	191690	216206
26	88647	191554	216085
25	88634	191418	215965
24	88620	191282	215845
23	88607	191147	215725
22	88593	191012	215605
21	88580	190876	215485
20	88566	190741	215366
19	88553	190607	215246
18	88539	190472	215127
17	88526	190337	215008
16	88512	190203	214889
15	88499	190069	214770
14	88485	189935	214651
13	88472	189801	214533
12	88458	189667	214414
11	88445	189533	214296
10	88431	189400	214178
9	88417	189266	214060
8	88404	189133	213942
7	88390	189000	213825
6	88377	188867	213707
5	88363	188734	213590
4	88349	188602	213473
3	88335	188469	213356
2	88322	188337	213239
1	88308	188205	213122
0	88295	188073	213000

28	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	46973	53208	113275
2	46999	53246	113292
3	47024	53283	113310
4	47050	53320	113327
5	47076	53358	113345
6	47101	53395	113362
7	47127	53432	113380
8	47152	53470	113398
9	47178	53507	113415
10	47204	53545	113433
11	47229	53582	113451
12	47255	53620	113468
13	47281	53657	113486
14	47306	53694	113504
15	47332	53732	113521
16	47358	53769	113539
17	47383	53807	113557
18	47409	53844	113575
19	47434	53882	113593
20	47460	53920	113610
21	47486	53957	113628
22	47511	53995	113646
23	47537	54032	113664
24	47562	54070	113682
25	47588	54107	113700
26	47614	54145	113718
27	47639	54183	113735
28	47665	54220	113753
29	47690	54258	113771
30	47716	54296	113789

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	88281	187941	212889
58	88267	187809	212773
57	88254	187677	212657
56	88240	187546	212540
55	88226	187415	212425
54	88213	187283	212309
53	88199	187152	212193
52	88185	187021	212078
51	88172	186892	211963
50	88158	186760	211847
49	88144	186630	211732
48	88130	186499	211617
47	88117	186369	211503
46	88103	186239	211388
45	88089	186109	211274
44	88075	185979	211159
43	88062	185850	211045
42	88048	185720	210931
41	88034	185591	210817
40	88020	185462	210704
39	88006	185333	210590
38	87993	185204	210477
37	87979	185075	210363
36	87965	184946	210250
35	87951	184818	210137
34	87937	184689	210024
33	87923	184561	209911
32	87909	184433	209799
31	87896	184305	209686
30	87882	184177	209574

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*Sinus**Tangens**Secans*

31	47741	54333	113807
32	47767	54371	113825
33	47793	54409	113843
34	47818	54446	113861
35	47844	54484	113879
36	47869	54522	113897
37	47893	54560	113915
38	47920	54597	113934
39	47946	54635	113952
40	47971	54673	113970
41	47997	54711	113988
42	48022	54748	114006
43	48048	54786	114024
44	48073	54824	114042
45	48099	54862	114061
46	48124	54900	114079
47	48150	54938	114097
48	48175	54975	114115
49	48201	55013	114134
50	48226	55051	114152
51	48252	55089	114170
52	48277	55127	114188
53	48303	55165	114207
54	48328	55203	114225
55	48354	55241	114243
56	48379	55279	114262
57	48405	55317	114280
58	48430	55355	114299
59	48456	55393	114317
60	48481	55431	114335

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	87868	184049	209462
28	87854	183922	209350
27	87840	183794	209238
26	87826	183667	209126
25	87812	183540	209014
24	87798	183413	208903
23	87784	183286	208791
22	87770	183159	208680
21	87756	183033	208569
20	87743	182906	208458
19	87729	182780	208347
18	87715	182654	208236
17	87701	182528	208126
16	87687	182402	208015
15	87673	182276	207905
14	87659	182150	207795
13	87645	182025	207685
12	87631	181899	207575
11	87617	181774	207465
10	87603	181649	207356
9	87589	181524	207246
8	87575	181399	207137
7	87560	181274	207027
6	87546	181150	206918
5	87532	181025	206809
4	87518	180901	206701
3	87504	180777	206592
2	87490	180653	206483
1	87476	180529	206375
0	87462	180405	206267

29	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	48506	55469	114354
2	48532	55507	114372
3	48557	55545	114391
4	48583	55583	114409
5	48608	55621	114428
6	48634	55659	114446
7	48659	55697	114465
8	48684	55736	114483
9	48710	55774	114502
10	48735	55812	114521
11	48761	55850	114539
12	48786	55888	114558
13	48811	55926	114576
14	48837	55964	114595
15	48862	56003	114614
16	48887	56041	114632
17	48913	56079	114651
18	48938	56117	114670
19	48964	56156	114689
20	48989	56194	114707
21	49014	56232	114726
22	49040	56270	114745
23	49065	56309	114764
24	49090	56347	114782
25	49116	56385	114801
26	49141	56424	114820
27	49166	56462	114839
28	49192	56500	114858
29	49217	56539	114877
30	49242	56577	114896

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	87448	180281	206158
58	87434	180158	206050
57	87420	180034	205942
56	87405	179911	205835
55	87391	179788	205727
54	87377	179665	205619
53	87363	179542	205512
52	87349	179419	205405
51	87335	179296	205298
50	87321	179174	205191
49	87306	179051	205084
48	87292	178929	204977
47	87278	178807	204870
46	87264	178685	204764
45	87250	178563	204657
44	87235	178441	204551
43	87221	178319	204445
42	87207	178198	204339
41	87193	178077	204233
40	87178	177955	204128
39	87164	177834	204022
38	87150	177713	203916
37	87136	177592	203811
36	87121	177471	203706
35	87107	177351	203601
34	87093	177230	203496
33	87079	177110	203391
32	87064	176990	203286
31	87050	176869	203182
30	87036	176749	203077

29	Sinus	Tangens	Secans
31	49208	56616	114914
32	49293	56654	114933
33	49318	56693	114952
34	49344	56731	114971
35	49369	56769	114990
36	49394	56807	115009
37	49419	56846	115028
38	49445	56885	115047
39	49470	56923	115066
40	49495	56962	115085
41	49522	57000	115105
42	49546	57039	115124
43	49571	57078	115143
44	49596	57116	115162
45	49622	57155	115181
46	49647	57193	115200
47	49672	57232	115219
48	49697	57271	115239
49	49723	57309	115258
50	49748	57348	115277
51	49773	57386	115296
52	49798	57425	115315
53	49824	57464	115335
54	49849	57503	115354
55	49874	57541	115373
56	49899	57580	115393
57	49924	57619	115412
58	49950	57657	115431
59	49975	57696	115451
60	50000	57735	115470

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	87021	176629	202973
28	87007	176510	202869
27	86993	176390	202765
26	86978	176271	202661
25	86964	176151	202557
24	86949	176032	202453
23	86935	175913	202349
22	86921	175794	202246
21	86906	175675	202143
20	86892	175556	202039
19	86878	175437	201936
18	86863	175319	201833
17	86849	175200	201730
16	86834	175082	201628
15	86820	174964	201525
14	86805	174846	201422
13	86791	174728	201320
12	86777	174610	201218
11	86762	174492	201116
10	86748	174375	201014
9	86733	174257	200912
8	86719	174140	200810
7	86704	174022	200708
6	86690	173905	200607
5	86675	173788	200505
4	86661	173671	200404
3	86646	173555	200303
2	86632	173438	200201
1	86617	173321	200101
0	86603	173205	200000

30	Sinus	Tangens	Secans
1	50025	57774	115489
2	50050	57813	115509
3	50076	57851	115528
4	50101	57890	115548
5	50126	57929	115567
6	50151	57968	115587
7	50176	58007	115606
8	50201	58045	115626
9	50227	58084	115645
10	50252	58123	115665
11	50277	58162	115684
12	50302	58201	115704
13	50327	58240	115724
14	50352	58279	115743
15	50377	58318	115763
16	50403	58357	115782
17	50428	58396	115802
18	50453	58435	115822
19	50478	58474	115841
20	50503	58513	115861
21	50528	58552	115881
22	50553	58591	115901
23	50578	58631	115920
24	50603	58670	115940
25	50628	58709	115960
26	50654	58748	115980
27	50679	58787	115999
28	50704	58826	116019
29	50729	58865	116039
30	50754	58905	116059

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	86588	173089	199899
58	86573	172973	199799
57	86559	172857	199698
56	86544	172741	199598
55	86530	172625	199498
54	86515	172509	199398
53	86501	172393	199298
52	86486	172278	199198
51	86471	172163	199098
50	86457	172047	198998
49	86442	171932	198899
48	86427	171817	198799
47	86413	171702	198700
46	86398	171588	198601
45	86384	171473	198502
44	86369	171358	198403
43	86354	171244	198304
42	86340	171129	198205
41	86325	171015	198107
40	86310	170901	198008
39	86295	170787	197910
38	86281	170673	197811
37	86296	170560	197713
36	86251	170446	197615
35	86237	170332	197517
34	86222	170219	197420
33	86207	170106	197322
32	86192	169992	197224
31	86178	169879	197127
30	86163	169766	197029

30	Sinus	Tangens	Secans
31	50779	58944	1160
32	50804	58983	1160
33	50829	59022	1161
34	50854	59061	1161
35	50879	59101	1161
36	50904	59140	1161
37	50929	59179	1161
38	50954	59218	1162
39	50979	59258	1162
40	51004	59297	1162
41	51029	59336	1162
42	51054	59376	1162
43	51079	59415	1163
44	51104	59454	1163
45	51129	59494	1163
46	51154	59533	1163
47	51179	59573	1164
48	51204	59612	1164
49	51229	59651	1164
50	51254	59691	1164
51	51279	59730	1164
52	51304	59770	1165
53	51329	59809	1165
54	51354	59849	1165
55	51379	59888	1165
56	51404	59928	1165
57	51429	59967	1166
58	51454	60007	1166
59	51479	60046	1166
60	51504	60086	1166

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
9	86148	169653	196932
8	86133	169541	196835
7	86119	169428	196738
6	86104	169315	196641
5	86089	169203	196544
4	86074	169091	196448
3	86059	168979	196351
2	86045	168866	196255
1	86030	168754	196158
0	86015	168643	196062
9	86000	168531	195966
8	85985	168419	195870
7	85970	168308	195774
6	85956	168196	195678
5	85941	168085	195583
4	85926	167974	195487
3	85911	167863	195391
2	85896	167752	195296
1	85881	167641	195201
0	85866	167530	195106
9	85851	167419	195011
8	85836	167309	194916
7	85821	167198	194821
6	85806	167088	194726
5	85792	166978	194632
4	85777	166867	194537
3	85762	166757	194443
2	85747	166647	194349
1	85731	166538	194254
0	85717	166428	194160

31	Sinus	Tangens	Secans
1	51529	60126	11668
2	51554	60165	11670
3	51579	60205	11672
4	51604	60245	11674
5	51628	60284	11676
6	51653	60324	11678
7	51678	60364	11680
8	51703	60403	11682
9	51728	60443	11684
10	51753	60483	11686
11	51778	60522	11688
12	51803	60561	11690
13	51828	60602	11693
14	51852	60642	11695
15	51877	60681	11697
16	51902	60721	11699
17	51927	60761	11701
18	51952	60801	11703
19	51977	60841	11705
20	52002	60881	11707
21	52026	60921	11709
22	52051	60960	11711
23	52076	61000	11713
24	52001	61040	11715
25	52126	61080	11717
26	52152	61120	11719
27	52175	61160	11722
28	52200	61200	11724
29	52225	61240	11726
30	52250	61280	11728

Sinus

Tangens

Secans

59	85702	166318	194066
58	85687	166209	193973
57	85672	166099	193879
56	85657	165990	193785
55	85642	165881	193692
54	85627	165772	193598
53	85612	165663	193505
52	85597	165554	193412
51	85582	165445	193319
50	85567	165337	193226
49	85551	165228	193133
48	85536	165120	193040
47	85521	165011	192947
46	85506	164903	192855
45	85491	164795	192762
44	85476	164687	192670
43	85461	164579	192578
42	85446	164471	192486
41	85431	164363	192394
40	85416	164256	192302
39	85401	164148	192210
38	85385	164041	192118
37	85370	163934	192027
36	85355	163826	191935
35	85340	163719	191844
34	85325	163612	191752
33	85310	163505	191661
32	85294	163398	191570
31	85279	163292	191479
30	85264	163185	191388

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31	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	52275	61320	117304
32	52299	61360	117325
33	52324	61400	117346
34	52349	61440	117367
35	52374	61480	117388
36	52399	61520	117409
37	52423	61561	117430
38	52448	61601	117451
39	52473	61641	117472
40	52498	61681	117493
41	52522	61721	117514
42	52547	61761	117535
43	52572	61801	117556
44	52597	61842	117577
45	52621	61882	117598
46	52646	61922	117619
47	52671	61962	117641
48	52696	62003	117662
49	52720	62043	117683
50	52745	62083	117704
51	52770	62124	117726
52	52794	62164	117747
53	52819	62204	117768
54	52844	62245	117790
55	52869	62285	117811
56	52893	62325	117832
57	52918	62366	117854
58	52943	62406	117875
59	52967	62446	117896
60	52992	62487	117918

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	85249	163079	191297
28	85214	162972	191207
27	85218	162866	191116
26	85203	162760	191026
25	85188	162654	190935
24	85173	162548	190845
23	85157	162442	190755
22	85142	162336	190665
21	85127	162230	190575
20	85112	162125	190485
19	85096	162019	190395
18	85081	161914	190305
17	85066	161808	190216
16	85051	161703	190126
15	85035	161598	190037
14	85020	161493	189947
13	85005	161388	189858
12	84989	161283	189769
11	84974	161179	189680
10	84959	161074	189591
9	84943	160970	189503
8	84928	160865	189414
7	84913	160761	189325
6	84897	160657	189237
5	84882	160553	189148
4	84866	160449	189060
3	84851	160345	188972
2	84836	160241	188884
1	84820	160137	188796
0	84805	160033	188708

32	Sinus	Tangens	Secans
1	53017	62527	117939
2	53043	62568	117961
3	53066	62608	117982
4	53091	62649	118004
5	53115	62689	118025
6	53140	62730	118047
7	53164	62770	118068
8	53189	62811	118090
9	53214	62852	118111
10	53238	62892	118133
11	53263	62933	118155
12	53288	62973	118176
13	53312	63014	118198
14	53337	63055	118220
15	53361	63095	118241
16	53386	63136	118263
17	53411	63177	118285
18	53435	63217	118307
19	53460	63258	118328
20	53484	63299	118350
21	53509	63340	118372
22	53534	63380	118394
23	53558	63421	118416
24	53583	63462	118437
25	53607	63503	118459
26	53632	63544	118481
27	53656	63584	118503
28	53681	63625	118525
29	53705	63666	118547
30	53730	63707	118569

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	84789	159930	188620
58	84774	159826	188532
57	84759	159723	188445
56	84743	159620	188357
55	84728	159517	188270
54	84713	159414	188183
53	84697	159311	188095
52	84681	159208	188008
51	84666	159105	187921
50	84650	159002	187834
49	84635	158900	187748
48	84619	158797	187661
47	84604	158695	187574
46	84588	158593	187488
45	84573	158490	187401
44	84557	158388	187315
43	84542	158286	187229
42	84526	158184	187142
41	84511	158083	187056
40	84495	157981	186970
39	84480	157879	186885
38	84464	157778	186799
37	84448	157676	186713
36	84433	157575	186627
35	84417	157474	186542
34	84402	157372	186457
33	84386	157371	186371
32	84370	157170	186286
31	84355	157069	186201
30	84339	156969	186116

37	53902	63994	118723
38	53926	64035	118745
39	53950	64076	118767
40	53975	64117	118790
41	54000	64158	118812
42	54024	64199	118834
43	54049	64240	118856
44	54073	64281	118878
45	54097	64322	118901
46	54122	64363	118923
47	54146	64404	118945
48	54171	64446	118967
49	54195	64487	118990
50	54220	64528	119012
51	54244	64569	119034
52	54269	64610	119057
53	54293	64652	119079
54	54317	64693	119102
55	54342	64734	119124
56	54366	64775	119146
57	54391	64817	119169
58	54415	64858	119191
59	54439	64899	119214
60	54464	64941	119236

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	84324	156868	1860
28	84308	156767	1859
27	84292	156667	1858
26	84277	156566	1857
25	84261	156466	1856
24	84245	156366	1856
23	84230	156265	1855
22	84214	156165	1854
21	84198	156065	1853
20	84182	155966	1852
19	84167	155866	1851
18	84151	155766	1851
17	84135	155666	1850
16	84120	155567	1849
15	84104	155467	1848
14	84088	155368	1847
13	84072	155269	1846
12	84057	155170	1846
11	84041	155071	1845
10	84025	154972	1844
9	84009	154873	1843
8	83994	154774	1842
7	83978	154675	1841
6	83962	154576	1841
5	83946	154478	1840
4	83930	154379	1839
3	83915	154281	1838
2	83899	154183	1837
1	83883	154085	1836
0	83867	153986	1836
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<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
54488	64982	119259
54513	65023	119281
54537	65065	119304
54561	65106	119327
54586	65148	119349
54610	65189	119372
54635	65231	119394
54659	65272	119417
54683	65314	119440
54708	65355	119462
54732	65397	119485
54756	65438	119508
54781	65480	119531
54805	65521	119553
54829	65563	119576
54854	65604	119599
54878	65646	119622
54902	65688	119645
54927	65729	119668
54951	65771	119691
54975	65813	119713
54999	65854	119735
55024	65896	119759
55048	65938	119782
55072	65980	119805
55097	66021	119828
55121	66063	119851
55145	66105	119874
55169	66147	119897
55194	66189	119920

	<i>Sines</i>	<i>Tangens</i>	<i>Secans</i>
59	83851	153888	183526
58	83835	153791	183444
57	83819	153693	183362
56	83804	153595	183280
55	83788	153497	183198
54	83772	153400	183116
53	83756	153302	183034
52	83740	153205	182953
51	83724	153107	182871
50	83708	153010	182790
49	83692	152913	182709
48	83676	152816	182627
47	83660	152719	182546
46	83645	152622	182465
45	83629	152525	182384
44	83613	152429	182303
43	83597	152332	182222
42	83581	152235	182142
41	83565	152139	182061
40	83549	152043	181981
39	83533	151946	181900
38	83517	151850	181820
37	83501	151754	181740
36	83485	151658	181659
35	83469	151562	181579
34	83453	151466	181499
33	83437	151370	181419
32	83421	151275	181340
31	83405	151179	181260
30	83389	151084	181180

37	55363	66482	120083
38	55388	66524	120106
39	55412	66566	120129
40	55436	66608	120152
41	55460	66650	120176
42	55484	66692	120199
43	55509	66734	120222
44	55533	66776	120246
45	55557	66818	120269
46	55581	66860	120292
47	55605	66902	120316
48	55630	66944	120339
49	55654	66986	120363
50	55678	67028	120386
51	55702	67071	120410
52	55726	67113	120433
53	55750	67155	120457
54	55775	67197	120480
55	55799	67239	120504
56	55823	67282	120527
57	55847	67324	120551
58	55871	67366	120574
59	55895	67409	120598
60	55919	67451	120622

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	83373	150988	181101
28	83356	150893	181021
27	83340	150797	180942
26	83324	150702	180862
25	83308	150607	180783
24	83292	150512	180704
23	83276	150417	180625
22	83260	150322	180546
21	83244	150228	180467
20	83228	150133	180388
19	83212	150038	180309
18	83195	149944	180231
17	83179	149849	180152
16	83163	149755	180074
15	83147	149661	179995
14	83131	149566	179917
13	83115	149472	179839
12	83098	149378	179761
11	83082	149284	179682
10	83066	149190	179604
9	83050	149097	179527
8	83034	149003	179449
7	83017	148909	179371
6	83001	148816	179293
5	82985	148722	179216
4	82969	148629	179138
3	82953	148536	179061
2	82936	148442	178984
1	82920	148349	178906
0	82904	148256	178829

34	<i>Sines</i>	<i>Tangens</i>	<i>Secans</i>
1	55943	67493	120645
2	55968	67536	120669
3	55992	67578	120693
4	56016	67620	120717
5	56040	67663	120740
6	56064	67705	120764
7	56088	67748	120788
8	56112	67790	120812
9	56136	67832	120836
10	56160	67875	120859
11	56184	67917	120883
12	56208	67950	120907
13	56232	68002	120931
14	56256	68045	120955
15	56280	68088	120979
16	56305	68130	121003
17	56329	68173	121027
18	56353	68215	121051
19	56377	68258	121075
20	56401	68301	121099
21	56425	68343	121123
22	56449	68386	121147
23	56473	68429	121171
24	56497	68471	121195
25	56521	68514	121220
26	56545	68557	121244
27	56569	68600	121268
28	56593	68642	121292
29	56617	68685	121316
30	56641	68728	121341

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	82887	148163	178752
58	82871	148070	178675
57	82855	147977	178598
56	82839	147885	178521
55	82822	147792	178445
54	82806	147699	178368
53	82790	147607	178291
52	82773	147514	178215
51	82757	147422	178138
50	82741	147330	178062
49	82724	147238	177986
48	82708	147146	177910
47	82692	147053	177833
46	82675	146962	177757
45	82659	146870	177681
44	82643	146778	177606
43	82626	146686	177530
42	82610	146595	177454
41	82593	146503	177378
40	82577	146411	177303
39	82561	146320	177227
38	82544	146229	177152
37	82528	146137	177077
36	82511	146046	177001
35	82495	145955	176926
34	82478	145864	176851
33	82462	145773	176776
32	82446	145682	176701
31	82429	145592	176626
30	82413	145501	176552

34	Sinus	Tangens	Secans
31	56665	68771	121365
32	56689	68814	121389
33	56713	68857	121414
34	56736	68900	121438
35	56760	68942	121462
36	56784	68985	121487
37	56808	69028	121511
38	56832	69071	121535
39	56856	69114	121560
40	56880	69157	121584
41	56904	69200	121609
42	56928	69243	121633
43	56952	69286	121658
44	56976	69329	121682
45	57000	69372	121707
46	57024	69416	121731
47	57047	69459	121756
48	57071	69502	121781
49	57095	69545	121805
50	57119	69588	121830
51	57143	69631	121854
52	57167	69675	121879
53	57191	69718	121904
54	57215	69761	121929
55	57238	69804	121953
56	57262	69847	121978
57	57286	69891	122003
58	57310	69934	122028
59	57334	69977	122053
60	57358	70021	122077

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	82396	145410	176477
28	82380	145320	176402
27	82363	145229	176328
26	82347	145139	176253
25	82330	145048	176179
24	82314	144958	176105
23	82297	144868	176031
22	82281	144778	175956
21	82264	144688	175882
20	82248	144598	175808
19	82231	144508	175734
18	82214	144418	175661
17	82198	144329	175587
16	82181	144239	175513
15	82165	144149	175440
14	82147	144060	175366
13	82131	143970	175293
12	82115	143881	175219
11	82098	143792	175146
10	82082	143703	175073
9	82065	143614	175000
8	82048	143525	174927
7	82032	143436	174854
6	82015	143347	174781
5	81999	143258	174708
4	81982	143169	174635
3	81965	143080	174562
2	81949	142992	174490
1	81932	142903	174417
0	81915	142815	174345

35	Sines	Tangens	Secans
1	57381	70064	122102
2	57405	70107	122127
3	57429	70151	122152
4	57453	70194	122177
5	57477	70238	122202
6	57501	70281	122227
7	57524	70325	122252
8	57548	70368	122277
9	57572	70412	122302
10	57596	70455	122327
11	57619	70499	122352
12	57643	70542	122377
13	57667	70586	122402
14	57691	70629	122428
15	57715	70673	122453
16	57738	70717	122478
17	57762	70760	122503
18	57786	70804	122528
19	57809	70848	122554
20	57833	70891	122579
21	57857	70935	122604
22	57881	70979	122629
23	57904	71023	122655
24	57928	71066	122680
25	57952	71110	122706
26	57976	71154	122731
27	57999	71198	122756
28	58023	71242	122782
29	58047	71285	122807
30	58070	71329	122833

	<i>Sines</i>	<i>Tangens</i>	<i>Secans</i>
59	81899	142726	174272
58	81882	142638	174200
57	81865	142550	174128
56	81848	142462	174056
55	81832	142374	173983
54	81815	142286	173911
53	81798	142198	173840
52	81781	142110	173768
51	81765	142022	173696
50	81748	141934	173624
49	81731	141847	173552
48	81714	141759	173481
47	81698	141672	173409
46	81680	141584	173338
45	81664	141497	173267
44	81647	141409	173195
43	81631	141322	173124
42	81614	141235	173053
41	81597	141148	172982
40	81580	141061	172911
39	81563	140974	172840
38	81546	140887	172769
37	81530	140800	172698
36	81513	140714	172628
35	81496	140627	172557
34	81479	140540	172487
33	81462	140454	172416
32	81445	140367	172346
31	81428	140281	172275
30	81412	140195	172205
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<i>S</i>	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	58094	71373	122858
2	58117	71417	122884
3	58141	71461	122909
4	58165	71505	122935
5	58189	71549	122960
6	58212	71593	122986
7	58236	71637	123012
8	58260	71681	123037
9	58283	71725	123063
0	58307	71769	123089
1	58330	71813	123114
2	58354	71857	123140
3	58378	71901	123166
4	58401	71946	123192
5	58425	71990	123217
6	58449	72034	123243
7	58472	72078	123269
8	58496	72122	123295
9	58519	72166	123321
0	58543	72211	123347
1	58567	72255	123373
2	58590	72299	123398
3	58614	72344	123424
4	58637	72388	123450
5	58661	72432	123476
6	58684	72477	123502
7	58708	72521	123529
8	58731	72565	123555
9	58755	72610	123581
0	58779	72654	123607

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	81395	140109	172135
28	81378	140022	172065
27	81361	139936	171995
26	81344	139850	171925
25	81327	139764	171855
24	81310	139679	171785
23	81293	139593	171715
22	81276	139507	171645
21	81259	139421	171575
20	81242	139336	171505
19	81225	139250	171435
18	81208	139165	171365
17	81191	139079	171295
16	81174	138994	171225
15	81157	138909	171160
14	81140	138824	171095
13	81123	138738	171025
12	81106	138653	170955
11	81089	138568	170885
10	81072	138484	170815
9	81055	138399	170745
8	81036	138313	170675
7	81021	138229	170605
6	81004	138145	170540
5	80987	138060	170475
4	80970	137976	170405
3	80953	137891	170335
2	80936	137807	170265
1	80919	137722	170195
0	80902	137638	170135

36

Sinus

Tangens

Secans

1 58802

72699

123633

2 58826

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3 58849

72788

123685

4 58873

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123711

5 58896

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6 58920

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7 58943

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123790

8 58967

73010

123817

9 58990

73055

123843

10 59014

73100

123869

11 59037

73144

123895

12 59061

73189

123922

13 59084

73234

123948

14 59107

73278

123975

15 59131

73323

124001

16 59154

73368

124028

17 59178

73413

124054

18 59201

73457

124081

19 59225

73502

124107

20 59248

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124134

21 59272

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22 59295

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23 59318

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124213

24 59342

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25 59365

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26 59389

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27 59412

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28 59435

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124347

29 59459

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124373

30 59482

73996

124400

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	80885	137554	17006
58	80867	137470	16999
57	80850	137386	16992
56	80833	137302	16985
55	80816	137218	16979
54	80799	137134	16972
53	80782	137050	16965
52	80765	136967	16958
51	80748	136883	16952
50	80730	136800	16945
49	80713	136716	16938
48	80696	136633	16931
47	80679	136549	16925
46	80662	136466	16918
45	80644	136383	16911
44	80627	136300	16904
43	80610	136217	16898
42	80593	136133	16891
41	80576	136051	16884
40	80558	135968	16878
39	80541	135885	16871
38	80524	135802	16864
37	80507	135719	16858
36	80489	135637	16851
35	80472	135554	16844
34	80455	135472	16838
33	80438	135389	16831
32	80420	135307	16825
31	80403	135224	16818
30	80386	135142	16811

<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59506	74041	124427
59529	74086	124454
59552	74131	124481
59576	74176	124508
59599	74221	124534
59622	74267	124561
59646	74312	124588
59669	74357	124615
59693	74402	124642
59716	74447	124669
59739	74492	124696
59763	74538	124723
59786	74583	124750
59809	74628	124777
59832	74674	124804
59856	74719	124832
59879	74764	124859
59902	74810	124886
59926	74855	124913
59949	74900	124940
59972	74946	124967
59995	74991	124995
60019	75037	125022
60042	75082	125049
60065	75128	125077
60089	75173	125104
60112	75219	125131
60135	75264	125159
60158	75310	125186
60181	75355	125214

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	80368	135060	168051
28	80351	134978	167985
27	80334	134896	167919
26	80316	134814	167853
25	80299	134732	167788
24	80282	134650	167722
23	80264	134568	167656
22	80247	134487	167591
21	80230	134405	167525
20	80212	134323	167460
19	80195	134242	167394
18	80178	134160	167329
17	80160	134079	167264
16	80143	133998	167198
15	80125	133916	167133
14	80108	133835	167068
13	80091	133754	167003
12	80073	133673	166938
11	80056	133592	166873
10	80038	133511	166809
9	80021	133430	166744
8	80003	133349	166679
7	79986	133268	166615
6	79968	133187	166550
5	79951	133107	166486
4	79934	133026	166421
3	79916	132946	166357
2	79899	132865	166292
1	79881	132785	166228
0	79864	132704	166164

<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
60205	75401	125241
60228	75447	125268
60251	75492	125296
60274	75538	125324
60298	75584	125351
60321	75629	125379
60344	75675	125406
60367	75721	125434
60390	75767	125462
60414	75812	125489
60437	75858	125517
60460	75904	125545
60483	75950	125572
60506	75996	125600
60529	76042	125628
60553	76088	125656
60576	76138	125683
60599	76180	125711
60622	76226	125739
60645	76272	125767
60668	76318	125795
60691	76364	125823
60714	76410	125851
60738	76456	125879
60761	76502	125907
60784	76548	125935
60807	76594	125963
60830	76640	125991
60853	76686	126019
60876	76733	126047

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	79846	132624	166100
58	79829	132544	166036
57	79811	132464	165972
56	79793	132384	165908
55	79776	132304	165844
54	79758	132224	165780
53	79741	132144	165717
52	79723	132063	165653
51	79706	131984	165589
50	79688	131904	165526
49	79671	131825	165462
48	79653	131745	165399
47	79635	131666	165335
46	79618	131586	165272
45	79600	131507	165209
44	79583	131427	165146
43	79565	131348	165083
42	79547	131269	165020
41	79530	131190	164957
40	79512	131110	164894
39	79494	131031	164831
38	79477	130952	164768
37	79459	130873	164705
36	79441	130795	164643
35	79424	130716	164580
34	79406	130637	164518
33	79388	130558	164455
32	79371	130480	164393
31	79353	130401	164330
30	79335	130323	164268

37	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	60899	76779	126075
32	60922	76825	126104
33	60945	76871	126132
34	60968	76918	126160
35	60991	76964	126188
36	61015	77010	126216
37	61038	77057	126245
38	61061	77103	126273
39	61084	77149	126301
40	61107	77196	126330
41	61130	77242	126358
42	61153	77289	126387
43	61176	77335	126415
44	61199	77382	126443
45	61222	77428	126472
46	61245	77475	126500
47	61268	77521	126529
48	61291	77568	126557
49	61314	77615	126586
50	61337	77661	126615
51	61360	77708	126643
52	61383	77754	126672
53	61406	77801	126701
54	61429	77848	126729
55	61451	77895	126758
56	61474	77941	126787
57	61497	77988	126815
58	61520	78035	126844
59	61543	78082	126873
60	61566	78129	126902

	<i>Sinus</i>	<i>Targens</i>	<i>Secans</i>
29	79318	130244	164206
28	79300	130166	164144
27	79282	130087	164081
26	79264	130009	164019
25	79247	129931	163957
24	79229	129853	163895
23	79211	129775	163834
22	79193	129696	163772
21	79176	129618	163710
20	79158	129541	163648
19	79140	129463	163587
18	79122	129385	163525
17	79105	129307	163464
16	79087	129229	163402
15	79069	129152	163341
14	79051	129074	163279
13	79033	128997	163218
12	79015	128919	163157
11	78998	128842	163096
10	78980	128764	163035
9	78962	128687	162974
8	78944	128610	162913
7	78926	128533	162852
6	78908	128456	162791
5	78891	128379	162730
4	78873	128302	162669
3	78855	128225	162609
2	78837	128148	162548
1	78819	128071	162487
0	78801	127994	162427

38	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	61589	78175	126931
2	61612	78222	126960
3	61635	78269	126988
4	61658	78316	127017
5	61681	78363	127046
6	61704	78410	127075
7	61726	78457	127104
8	61749	78504	127133
9	61772	78551	127162
10	61795	78598	127191
11	61818	78645	127221
12	61841	78692	127250
13	61864	78739	127279
14	61887	78786	127308
15	61909	78834	127337
16	61932	78881	127366
17	61955	78928	127396
18	62078	78975	127425
19	62001	79022	127454
20	62024	79070	127483
21	62046	79117	127513
22	62069	79164	127542
23	62092	79212	127571
24	62115	79259	127601
25	62138	79306	127630
26	62160	79354	127660
27	62183	79401	127689
28	62206	79449	127719
29	62229	79496	127748
30	62251	79544	127778

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	78783	127917	162366
58	78765	127841	162306
57	78747	127764	162246
56	78729	127688	162185
55	78711	127611	162125
54	78693	127535	162065
53	78676	127458	162005
52	78658	127382	161945
51	78640	127306	161885
50	78622	127230	161825
49	78604	127153	161765
48	78586	127077	161705
47	78568	127001	161646
46	78550	126925	161586
45	78532	126849	161526
44	78514	126774	161467
43	78496	126698	161407
42	78478	126622	161348
41	78460	126546	161288
40	78442	126471	161229
39	78424	126395	161170
38	78405	126319	161111
37	78387	126244	161051
36	78369	126169	160992
35	78351	126093	160933
34	78333	126018	160874
33	78315	126943	160815
32	78297	126867	160756
31	78279	126792	160698
30	78261	126717	160639

38	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	62274	79591	127807
32	62297	79639	127837
33	62320	79686	127867
34	62342	79734	127896
35	62365	79781	127926
36	62388	79829	127956
37	62411	79877	127985
38	62433	79924	128015
39	62456	79972	128045
40	62479	80020	128075
41	62502	80067	128105
42	62524	80115	128134
43	62547	80163	128164
44	62570	80211	128194
45	62592	80258	128224
46	62615	80306	128254
47	62638	80354	128284
48	62660	80402	128314
49	62683	80450	128344
50	62706	80498	128374
51	62728	80546	128404
52	62751	80594	128434
53	62774	80642	128464
54	62796	80690	128495
55	62819	80738	128525
56	62842	80786	128555
57	62864	80834	128585
58	62887	80882	128615
59	62909	80930	128646
60	62932	80978	128676

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	78243	125642	160580
28	78225	125567	160521
27	78206	125492	160463
26	78188	125417	160404
25	78170	125343	160346
24	78152	125268	160287
23	78134	125193	160229
22	78116	125118	160171
21	78098	125044	160112
20	78079	124969	160054
19	78061	124895	159996
18	78043	124820	159938
17	78025	124746	159880
16	78007	124672	159822
15	78988	124597	159764
14	77970	124523	159706
13	77952	124449	159648
12	77934	124374	159590
11	77916	124301	159533
10	77897	124227	159475
9	77879	124153	159418
8	77861	124079	159360
7	77843	124005	159302
6	77824	123931	159245
5	77806	123858	159188
4	77788	123784	159130
3	77769	123710	159073
2	77751	123637	159016
1	77733	123563	158959
0	77715	123490	158902

39	Sinus	Tangens	Secans
1	62955	81027	128706
2	62977	81075	128737
3	63000	81123	128767
4	63022	81171	128797
5	63045	81220	128828
6	63068	81268	128858
7	63090	81316	128889
8	63113	81364	128919
9	63135	81413	128950
10	63158	81461	128980
11	63180	81510	129011
12	63203	81558	129041
13	63225	81606	129072
14	63248	81655	129103
15	63271	81703	129133
16	63293	81752	129164
17	63316	81800	129195
18	63338	81849	129226
19	63361	81898	129256
20	63382	81946	129287
21	63406	81995	129316
22	63428	82044	129349
23	63451	82092	129380
24	63473	82141	129411
25	63496	82190	129442
26	63518	82238	129473
27	63540	82287	129504
28	63563	82336	129535
29	63585	82385	129566
30	63608	82434	129597

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	77696	123416	158845
58	77678	123343	158788
57	77660	123270	158731
56	77641	123196	158674
55	77623	123123	158617
54	77605	123050	158560
53	77586	122977	158503
52	77568	122904	158447
51	77550	122831	158390
50	77531	122758	158333
49	77513	122685	158277
48	77494	122612	158221
47	77476	122539	158164
46	77458	122467	158108
45	77439	122394	158051
44	77421	122321	157995
43	77402	122249	157939
42	77384	122176	157883
41	77366	122104	157827
40	77347	122031	157771
39	77329	121959	157715
38	77310	121886	157659
37	77292	121814	157603
36	77273	121742	157547
35	77255	121670	157491
34	77236	121598	157436
33	77218	121526	157380
32	77199	121454	157324
31	77181	121382	157269
30	77162	121310	157213

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39	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	63630	82483	129628
32	63653	82531	129659
33	63675	82580	129690
34	63698	82629	129721
35	63720	82678	129752
36	63742	82727	129784
37	63765	82776	129815
38	63787	82825	129846
39	63810	82874	129877
40	63832	82923	129909
41	63854	82972	129940
42	63877	83022	129971
43	63899	83071	130003
44	63922	83120	130034
45	63944	83169	130066
46	63966	83218	130097
47	63989	83268	130129
48	64011	83317	130160
49	64033	83366	130192
50	64056	83415	130223
51	64078	83465	130255
52	64100	83514	130287
53	64123	83564	130318
54	64145	83613	130350
55	64167	83662	130382
56	64190	83712	130413
57	64212	83761	130445
58	64234	83811	130477
59	64256	83860	130509
60	64279	83910	130541

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	77144	121238	157158
28	77125	121166	157103
27	77107	121094	157047
26	77088	121023	156992
25	77070	120951	156937
24	77051	120879	156881
23	77033	120808	156826
22	77014	120736	156771
21	76996	120665	156716
20	76977	120593	156661
19	76959	120522	156606
18	76940	120451	156551
17	76921	120379	156497
16	76903	120308	156442
15	76884	120237	156387
14	76866	120166	156332
13	76847	120095	156278
12	76828	120024	156223
11	76810	119953	156169
10	76791	119882	156114
9	76771	119811	156060
8	76754	119740	156005
7	76735	119669	155951
6	76717	119599	155897
5	76698	119528	155843
4	76679	119457	155789
3	76660	119387	155734
2	76642	119316	155680
1	76623	119246	155626
0	76604	119175	155572
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<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
64301	83960	130573
64323	84009	130605
64346	84059	130636
64368	84108	130668
64390	84158	130700
64412	84208	130732
64435	84258	130764
64457	84307	130796
64479	84357	130829
64501	84407	130861
64524	84457	130893
64546	84507	130925
64568	84556	130957
64590	84606	130989
64612	84656	131022
64635	84706	131054
64657	84756	131089
64679	84806	131119
64701	84856	131151
64723	84906	131183
64746	84956	131216
64768	85006	131248
64790	85057	131281
64812	85107	131313
64834	85157	131346
64856	85207	131378
64878	85257	131411
64901	85307	131443
64923	85358	131476
64945	85408	131509

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	76586	119105	155518
58	76567	119035	155465
57	76548	118964	155411
56	76530	118894	155357
55	76511	118824	155303
54	76492	118754	155250
53	76473	118684	155196
52	76455	118614	155143
51	76436	118544	155089
50	76417	118474	155036
49	76398	118404	154982
48	76380	118334	154929
47	76361	118264	154876
46	76342	118194	154822
45	76323	118125	154769
44	76304	118055	154716
43	76286	117986	154663
42	76267	117916	154610
41	76248	117846	154557
40	76229	117777	154504
39	76210	117708	154451
38	76192	117638	154398
37	76173	117569	154345
36	76154	117500	154292
35	76135	117430	154240
34	76116	117361	154187
33	76097	117292	154134
32	76078	117223	154082
31	76059	117154	154029
30	76041	117085	153977

40	Sinus	Tangens	Secans
31	64967	85458	131541
32	64989	85509	131574
33	65011	85559	131607
34	65033	85609	131640
35	65055	85660	131672
36	65077	85710	131705
27	65099	85761	131738
38	65122	85811	131771
39	65144	85862	131804
40	65166	85912	131837
41	65188	85963	131870
42	65210	86014	131903
43	65232	86064	131936
44	65254	86115	131969
45	65276	86166	132002
46	65298	86216	132035
47	65320	86267	132068
48	65342	86318	132101
49	65364	86368	132134
50	65386	86419	132168
51	65408	86470	132201
52	65430	86521	132234
53	65452	86572	132267
54	65474	86623	132301
55	65496	86674	132334
56	65518	86725	132367
57	65540	86776	132401
58	65562	86827	132434
59	65584	86878	132468
60	65606	86929	132501

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	76022	117016	153928
28	76003	116947	153872
27	75984	116878	153820
26	75965	116809	153768
25	75946	116741	153715
24	75927	116672	153663
23	75908	116603	153611
22	75889	116535	153559
21	75870	116466	153507
20	75851	116398	153455
19	75832	116329	153403
18	75813	116261	153351
17	75794	116192	153299
16	75775	116124	153247
15	75756	116056	153196
14	75738	115987	153144
13	75719	115919	153092
12	75700	115851	153041
11	75680	115783	152989
10	75661	115715	152938
9	75642	115647	152886
8	75623	115579	152835
7	75604	115511	152784
6	75585	115443	152732
5	75566	115375	152681
4	75547	115308	152630
3	75528	115240	152579
2	75509	115172	152527
1	75490	115104	152476
0	75471	115037	152425
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41	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	65628	86980	132535
2	65650	87031	132568
3	65672	87082	132602
4	65694	87133	132636
5	65716	87184	132669
6	65738	87236	132703
7	65759	87287	132737
8	65781	87338	132770
9	65803	87389	132804
10	65825	87441	132838
11	65847	87492	132872
12	65869	87543	132905
13	65891	87595	132939
14	65913	87646	132973
15	65935	87698	133007
16	65956	87749	133041
17	65978	87801	133075
18	66000	87852	133109
19	66022	87904	133143
20	66044	87955	133177
21	66066	88007	133211
22	66088	88059	133245
23	66109	88110	133279
24	66131	88162	133314
25	66153	88214	133348
26	66175	88265	133382
27	66197	88317	133416
28	66218	88369	133451
29	66240	88421	133485
30	66262	88473	133519

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	75452	114969	152374
58	75433	114902	152323
57	75414	114834	152272
56	75395	114767	152222
55	75375	114699	152171
54	75356	114632	152120
53	75337	114565	152069
52	75318	114498	152019
51	75299	114430	151968
50	75280	114362	151918
49	75261	114296	151867
48	75241	114229	151817
47	75222	114162	151766
46	75203	114095	151716
45	75184	114028	151665
44	75165	113961	151615
43	75146	113894	151565
42	75126	113828	151515
41	75107	113761	151465
40	75088	113694	151415
39	75069	113627	151364
38	75050	113561	151314
37	75030	113494	151264
36	75011	113428	151215
35	74992	113361	151165
34	74973	113295	151115
33	74953	113228	15106
32	74934	113162	151015
31	74915	113096	150966
30	74896	113029	150916

41	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	66224	88524	133554
32	66306	88576	133588
33	66327	88628	133622
34	66349	88680	133657
35	66371	88732	133691
36	66393	88784	133726
37	66414	88836	133760
38	66436	88888	133795
39	66458	88940	133830
40	66480	88992	133864
41	66501	89045	133899
42	66523	89097	133934
43	66545	89149	133968
44	66566	89201	134003
45	66588	89253	134038
46	66610	89306	134073
47	66632	89358	134108
48	66653	89410	134142
49	66675	89463	134177
50	66697	89515	134212
51	66718	89567	134247
52	66740	89620	134282
53	66762	89672	134317
54	66783	89725	134352
55	66805	89777	134387
56	66827	89829	134423
57	66848	89883	134458
58	66870	89937	134493
59	66891	89988	134528
60	66913	90040	134563

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	74876	112963	150866
28	74857	112897	150817
27	74838	112831	150767
26	74818	112765	150718
25	74799	112699	150669
24	74780	112633	150619
23	74760	112567	150570
22	74741	112501	150521
21	74722	112435	150471
20	74703	112369	150422
19	74683	112303	150373
18	74664	112238	150324
17	74644	112172	150275
16	74625	112106	150226
15	74606	112041	150177
14	74586	111975	150128
13	74567	111909	150079
12	74548	111844	150030
11	74528	111778	149981
10	74509	111713	149933
9	74489	111648	149884
8	74470	111582	149835
7	74451	111517	149786
6	74431	111452	149738
5	74412	111387	149690
4	74392	111321	149641
3	74373	111256	149593
2	74353	111192	149544
1	74334	111126	149496
0	74314	111061	149448

42	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	66935	90093	134599
2	66956	90146	134634
3	66978	90199	134669
4	66999	90251	134704
5	67021	90304	134744
6	67043	90357	134775
7	67064	90410	134811
8	67086	90463	134846
9	67107	90516	134882
10	67129	90569	134917
11	67151	90621	134953
12	67172	90674	134988
13	67194	90727	135024
14	67215	90781	135060
15	67237	90834	135097
16	67258	90887	135131
17	67280	90940	135167
18	67301	90993	135203
19	67323	91046	135238
20	67344	91099	135274
21	67366	91153	135310
22	67387	91206	135346
23	67409	91259	135382
24	67430	91313	135418
25	67452	91366	135454
26	67473	91419	135490
27	67495	91473	135526
28	67516	91526	135562
29	67538	91580	135598
30	67559	91633	135634

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	74295	110996	149399
58	74276	110931	149351
57	74256	110861	149303
56	74237	110802	149255
55	74217	110737	149207
54	74198	110672	149159
53	74178	110607	149111
52	74159	110543	149063
51	74139	110478	149015
50	74120	110414	148967
49	74100	110349	148919
48	74080	110285	148871
47	74061	110220	148824
46	74041	110156	148776
45	74022	110091	148728
44	74002	110027	148681
43	73983	109963	148633
42	73963	109899	148586
41	73944	109834	148538
40	73924	109770	148491
39	73904	109706	148443
38	73885	109642	148396
37	73865	109578	148349
36	73846	109514	148301
35	73826	109450	148254
34	73806	109386	148207
33	73787	109322	148160
32	73767	109258	148113
31	73747	109195	148066
30	73728	109131	148019

42	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	67580	91687	135670
32	67602	91740	135707
33	67623	91794	135743
34	67645	91847	135779
35	67666	91901	135815
36	67688	91955	135852
37	67709	92008	135888
38	67730	92062	135924
39	67752	92116	135961
40	67773	92170	135997
41	67795	92223	136034
42	67816	92277	136070
43	67837	92331	136107
44	67859	92385	136143
45	67880	92439	136180
46	67901	92493	136217
47	67923	92547	136253
48	67944	92601	136290
49	67965	92655	136327
50	67987	92709	136363
51	68008	92763	136400
52	68029	92817	136437
53	68051	92872	136474
54	68072	92927	136511
55	68093	92980	136548
56	68115	93034	136585
57	68136	93088	136622
58	68157	93143	136659
59	68179	93197	136696
60	68200	93252	136733

	<i>Sines</i>	<i>Tangens</i>	<i>Secans</i>
29	73708	109067	147972
28	73688	109003	147925
27	73669	108940	147878
26	73649	108876	147831
25	73629	108813	147784
24	73610	108749	147738
23	73590	108686	147691
22	73570	108622	147644
21	73551	108559	147598
20	73531	108496	147551
19	73511	108432	147504
18	73491	108369	147458
17	73472	108306	147411
16	73452	108243	147365
15	73432	108179	147319
14	73412	108116	147272
13	73393	108053	147226
12	73373	107990	147180
11	73353	107927	147134
10	73333	107864	147087
9	73314	107801	147041
8	73294	107738	146995
7	73274	107676	146949
6	73254	107613	146903
5	73234	107550	146857
4	73215	107487	146811
3	73195	107425	146765
2	73175	107362	146719
1	73155	107299	146674
0	73135	107237	146628

43	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	68221	93306	136770
2	68242	93360	136807
3	68264	93415	136844
4	68285	93469	136881
5	68306	93524	136919
6	68327	93578	136956
7	68349	93633	136993
8	68370	93688	137030
9	68391	93742	137068
10	68412	93797	137105
11	68433	93852	137143
12	68455	93906	137180
13	68476	93961	137218
14	68497	94016	137255
15	68518	94071	137293
16	68539	94125	137330
17	68561	94180	137368
18	68582	94235	137406
19	68603	94290	137443
20	68624	94345	137481
21	68645	94400	137519
22	68666	94455	137556
23	68688	94510	137594
24	68709	94565	137632
25	68730	94620	137670
26	68751	94676	137708
27	68772	94731	137746
28	68793	94786	137784
29	68814	94841	137822
30	68835	94896	137860

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	73116	107174	146582
58	73026	107112	146537
57	73076	107049	146491
56	73056	106987	146445
55	73036	106925	146400
54	73016	106862	146354
53	72996	106800	146309
52	72976	106738	146263
51	72957	106676	146218
50	72937	106613	146173
49	72917	106551	146127
48	72897	106489	146082
47	72877	106427	146037
46	72857	106365	145992
45	72837	106303	145946
44	72817	106241	145901
43	72797	106179	145856
42	72777	106117	145811
41	72757	106056	145766
40	72737	105993	145721
39	72717	105932	145676
38	72697	105870	145631
37	72677	105809	145587
36	72657	105747	145542
35	72637	105685	145497
34	72617	105624	145452
33	72597	105562	145408
32	72577	105501	145363
31	72557	105439	145319
30	72537	105378	145274
46			N

43	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
31	68857	94952	137898
32	68878	95007	137936
33	68899	95062	137974
34	68920	95118	138012
35	68941	95173	138051
36	68962	95229	138089
37	68983	95284	138127
38	69004	95340	138165
39	69025	95395	138204
40	69046	95451	138242
41	69067	95506	138280
42	69088	95562	138319
43	69109	95618	138357
44	69130	95673	138396
45	69151	95729	138434
46	69172	95785	138473
47	69193	95841	138512
48	69214	95897	138550
49	69235	95952	138589
50	69256	96008	138627
51	69277	96064	138666
52	69298	96120	138705
53	69319	96176	138744
54	69340	96232	138783
55	69361	96288	138822
56	69382	96344	138860
57	69403	96400	138899
58	69424	96457	138938
59	69445	96513	138977
60	69466	96569	139016

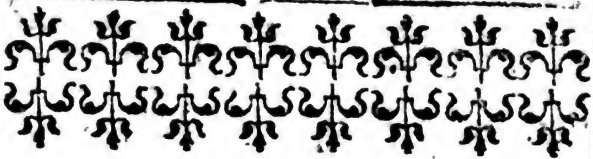
	<i>Sinus</i>	<i>Tangens</i>	<i>cans</i>
29	72517	105317	145229
28	72497	105255	145185
27	72477	105194	145141
26	72457	105133	145096
25	72437	105072	145052
24	72417	105010	145007
23	72397	104949	144963
22	72377	104888	144919
21	72357	104827	144875
20	72337	104766	144831
19	72317	104705	144787
18	72297	104644	144742
17	72277	104583	144698
16	72257	104522	144654
15	72236	104461	144610
14	72216	104401	144566
13	72196	104340	144523
12	72176	104279	144479
11	72156	104218	144435
10	72136	104158	144391
9	72116	104097	144347
8	72095	104036	144304
7	72075	103976	144260
6	72055	103915	144217
5	72035	103855	144173
4	72015	103794	144129
3	71995	103734	144086
2	71974	103674	144042
1	71954	103613	143999
0	71934	103553	143956
46	N ij		

44	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
1	69487	96625	139055
2	69508	96681	139095
3	69529	96738	139134
4	69549	96794	139173
5	69570	96850	139212
6	69591	96907	139251
7	69612	96963	139291
8	69633	97020	139330
9	69654	97076	139369
10	69675	97133	139409
11	69696	97189	139448
12	69717	97246	139487
13	69737	97302	139527
14	69758	97359	139566
15	69779	97416	139606
16	69800	97472	139646
17	69821	97529	139685
18	69842	97586	139725
19	69862	97643	139764
20	69883	97700	139804
21	69904	97756	139844
22	69925	97813	139884
23	69946	97870	139924
24	69966	97927	139963
25	69987	97984	140003
26	70009	98041	140043
27	70028	98098	140083
28	70049	98155	140123
29	70070	98213	140163
30	70091	98270	140203

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
59	71914	103493	143912
58	71894	103433	143869
57	71873	103372	143826
56	71853	103312	143783
55	71833	103252	143739
54	71813	103192	143696
53	71792	103132	143653
52	71772	103072	143610
51	71752	103012	143567
50	71732	102952	143524
49	71711	102892	143481
48	71691	102832	143438
47	71671	102772	143395
46	71650	102713	143352
45	71630	102653	143309
44	71610	102593	143267
43	71590	102533	143224
42	71569	102474	143181
41	71549	102413	143139
40	71529	102355	143096
39	71508	102295	143053
38	71488	102236	143011
37	71468	102176	142968
36	71447	102117	142926
35	71427	102057	142883
34	71406	101998	142841
33	71386	101939	142799
32	71366	101879	142756
31	71345	101820	142714
30	71325	101761	142672

<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
70112	98327	140243
70132	98384	140283
70153	98441	140324
70174	98499	140364
70195	98556	140404
70215	98613	140444
70236	98671	140485
70257	98728	140525
70277	98786	140565
70298	98843	140606
70319	98901	140646
70339	98958	140687
70360	99016	140727
70381	99073	140768
70401	99131	140808
70422	99189	140849
70443	99247	140890
70463	99304	140930
70484	99362	141971
70505	99420	141012
70525	99478	141053
70546	99536	141093
70567	99594	141134
70587	99652	141175
70608	99710	141216
70628	99768	141257
70649	99826	141298
70670	99884	141339
70690	99942	141380
70711	100000	141421

	<i>Sinus</i>	<i>Tangens</i>	<i>Secans</i>
29	71305	101702	142630
28	71284	101642	142588
27	71264	101583	142545
26	71243	101524	142503
25	71223	101465	142461
24	71203	101406	142419
23	71182	101347	142377
22	71162	101288	142335
21	71141	101229	142293
20	71121	101170	142251
19	71100	101112	142209
18	71080	101053	142168
17	71059	100994	142126
16	71039	100935	142084
15	71019	100876	142042
14	70998	100818	142001
13	70978	100759	141959
12	70957	100701	141918
11	70937	100642	141876
10	70916	100583	141835
9	70896	100525	141793
8	70875	100467	141752
7	70855	100408	141710
6	70834	100350	141669
5	70813	100291	141627
4	70793	100233	141587
3	70772	100175	141545
2	70752	100116	141504
1	70731	100058	141463
0	70711	100000	141421
145	N iiij		

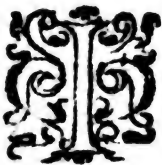


EXPLICATIO

NVMERORVM

HVIVS CA.

NONIS.



N vnaquaque pagina Canonis sunt quatuor columnæ & ordines numerorum : primus ordo continet gradus & minuta quadrantis. Nam in capite paginæ sinistræ, & in calce paginæ dextræ notati sunt gradus characteribus paulò crassioribus, sed in columna minuta sunt, quæ in pagina sinistra semper crescunt descendendo, sed in pagina dextra ascendendo : se-

CANONIS.

undum quam dispositionem
occidit, vt pagina altera semper
alterius complementum è re-
gione præbeat: veluti si in pagi-
nis sinistris capiamus 4 grad.
39'. è regione in pagina dextra
inuenitur complementum, ni-
mirum 85 grad. 21'. Quod vero
attinet ad tres alias columnas
ordinelque numerorum, conti-
nent sinus reëtos, tangentes &
secantes, respectu radij partium
100000, & sequuntur eundem
ordinem, quem minuta primæ
columnæ; ita vt in paginis si-
nistris numeri crescant descen-
dendo, sed in paginis dextris
ascendendo.

VSVS CANONIS.

Vsus huius Canonis duplex
est: Nam primò beneficio il-
lius inuenientur sinus, tangens

& secans cuiuslibet arcus propositi semicirculo minoris; secundò arcus dabitur vel angulus respondens cuilibet sinui, tangentiæ & secanti datæ. Et ut hoc explicemus sinus tantum accipiemus. Nā observanda sunt eadē in tangentibus & secantibus quæ in sinibus; itaque quod dicemus hic de usu sinuum facillime tangentibus & secantibus applicabitur.

1. *Dato arcu vel angulo, invenire sinum rectum eius.*

Quære numerum graduum in capite vel calce Canonis, scilicet in capite paginarum sinistrarum, si numerus graduum anguli propositi minor est 45; sed in calce paginarum dextrarum, si maior est 45; & minuta in columna eorum, & è regione in columna sinuū dabitur sinus anguli propositi: Observabis

CANONIS.

men cum numerus graduum minor est 45, & quum nulla sunt minuta cum gradibus illis, ex numero graduum vnum esse auctendum, & loco illius 60 minuta esse numeranda.

EXEMPLI GRATIA.

Detur angulus vel arcus graduum 17, cuius sinus rectus est inueniendus. Quoniam hic numerus est minor 45, & nulla sunt minuta iuncta, accipio 36 grad. 60' loco dictorum 37 graduum, & quaro numerum 36 grad. in capite paginarum sinistrarum Canonis, & eo reperto uero sub illo in columna minutorum, numerum 60, qui postremus est, e regione cuius in columna sinuum reperio 60181, qui est sinus arcus propositi 17 grad.

Iterum detur angulus 25 gr. 17', cuius inueniendus sit sinus rectus. Quia hic angulus est minor 45. gr.

& secans cuiuslibet arcus propositi semicirculo minoris; secundò arcus dabitur vel angulus respondens cuilibet sinui, tangenti ac secanti datæ. Et ut hoc explicemus sinus tantum accipiemus, Nā observanda sunt eadē in tangentibus & secantibus quę in sinibus; itaque quod dicemus hic de usu sinuum facillime tangentibus & secantibus applicabitur.

1. *Dato arcu vel angulo, invenire sinum rectum eius.*

Quære numerum graduum in capite vel calce Canonis, scilicet in capite paginarum sinistrarum, si numerus graduum anguli propositi minor est 45; sed in calce paginarum dextrarum, si maior est 45; & minuta in columna eorum, & è regione in columna sinuū dabitur sinus anguli propositi : Observabis

CANONIS.

tamen cum numerus graduum minor est 45, & quum nulla sunt minuta cum gradibus illis, ex numero graduum vnum esse auferendum, & loco illius 60 minuta esse numeranda.

EXEMPLI GRATIA.

Detur angulus vel arcus graduū 37, cuius sinus rectus est inueniendus. Quoniam hic numerus est minor 45, & nulla sunt minuta iuncta, accipio 36 grad. 60' loco dictorum 37 graduum, & quaro numerum 36 grad. in capite paginarum sinistrarum Canonis, & eo reperto quaro sub illo in columna minutorum, numerum 60, qui postremus est, e regione cuius in columna sinuū reperio 60181, qui est sinus arcus propositi 37 grad.

Iterum detur angulus 25 gr. 17', cuius inueniendus sit sinus rectus. Quia hic angulus est minor 45. gr.

quaro in capite paginarum sinistra-
rū numerum gr. 25, & descendendo
quaro in columna minutorum nu-
merum 17, è regione cuius in colum-
na sinuum inuenio 42709, qui est
sinus anguli propositi 25 gr. 17'.

Quod si præter gradus & mi-
nuta anguli, vel arcus propositi
essent adhuc secunda, oportet
et capere partem proportiona-
lem his secundis respondētem:
quod quidem fiet ponendo in
primo termino regulæ trium
60'', in secundo termino diffe-
rentiam, quæ est inter sinum re-
ctum respondentem numero
graduum & minutorum supra
dicti arcus propositi, & sinum
rectum arcus proximè maioris,
& in tertio termino numerum
secundorum proposit. & regula
facta habebitur pars proportio-
nalis respondens secundis illis,
quæ addita sinui inuento è re-

CANONIS.

gione graduum & minutorum
datorum efficit sinum rectum
arcus propositi.

VERBI GRATIA.

*Detur angulus, vel arcus 49 gr
47'. 46". cuius sinus rectus est in-
ueniendus. Inuenio ut supradictum
est sinum respondentem 49 gr. 47'.
esse 76361, quem subtraho à proxi-
me maiori 76380, & restant 19
dico igitur, Si 60" dent 19, quot
dabunt 46" anguli propositi? &
regula facta veniunt fere 15 pro
parte proportionali congruente illis
46", quæ addita priori sinui cōper-
to cum 49 gr. 47'. efficiet 76376,
qui sinus est arcus vel anguli pro-
positi.*

Multi autē non capiunt dictā
partem proportionalem, nisi in
rebus magni momenti, & in qui-
bus errorem esse iudicāt sensibi-
lem, sed duntaxat id obseruant
vt accipiāt vnum minut. pro his

dictis secundis si supersunt 30,
& ea relinquant parui facientes
si 30 nō sint. Ideoque pro dicto
arcu sumi potest sinus compe-
tens 49 grad. 48'.

Quod si angulus propositus
esset obtusus, tantum tollendus
esset ex 180 gr. & ex reliquo in-
ueniendus sinus rectus ut supra
dictum est, qui quidem erit
etiam sinus dicti anguli obtusi
propositi.

*V.G. Proposito angulo 127 grad.
32', 45'', cuius sinus rectus sit inue-
niendus; subtraho illum angulum
ex 180 gr. & restant 52 grad. 27'.
15''. quorum quaro sinum, & inue-
nio illum esse 79286, qui etiam est
sinus anguli obtusi propositi.*

*2. Dato angulo, vel arcu inuenire
sinum complementi illius.*

Quoniam complementum
anguli, siue arcus est differentia
illius à gradibus 90, siue à 180

C A N O N I S.

grad. si complementum sit ad semicirculum; si inueniatur sinus rectus huius differentiæ, habebitur sinus complementi arcus, vel anguli propositi: quod manifestum reddemus exemplis.

Volens inuenire sinum complementi arcus, vel anguli 40 grad. 21'. quaro in capite paginarum sinistrarum numerum 40, & in columna minorum numerum 21, & e regione huius in columna sinuum pagina dextra inuenio 76210, & talis est sinus complementi anguli dati 40 gr. 21'. Sic etiam volens inuenire sinum complementi anguli, vel arcus 130 grad. 35'. ex hoc arcu subtraho 90 gr. ut habeam differentiam 40 gr. 35'. cuius sinus erit 65055, qui sinus est complementi arcus propositi 130 gr. 35'. Sed volens inuenire sinum complementi illius arcus ad semicirculum, subtraho illum e

x

grad. 180, & restant 49 grad. 25'.
 quorum sinus est 75946, qui erit
 sinus complementi arcus propositi
 ad semicirculum.

3. Dati arcus, vel anguli sinum
 versum reperire.

Si datus arcus est minor qua-
 drante, aut si datus angulus acu-
 tus est, detrahe eius sinum cō-
 plementi à sinu toto, & relin-
 quetur sinus versus: Si vero an-
 gulus, vel arcus propositus
 quadrante maior est, sed tamen
 semicirculo minor, adde sinum
 complementi illius sinui toti, &
 fiet sinus versus arcus, vel angu-
 li propositi.

V.G. Detur angulus, vel arcus 25
 gr. 40'. cuius sinus versus quari de-
 beat. Inuenio sinum complementi il-
 lius esse 90133, quem detraho à sinu
 toto 100000, & restant 9867 pro
 sinu verso pradietti anguli 25 grad.
 40'. Sed volens inuenire sinum

versum

CANONIS.

versum arcus $132^{\circ} 17'$. quāro si-
num complementi eius, quem inue-
nio esse 67280, & hoc addito sinui
toti 100000, fiet 167280, qui est
sinus versus arcus propositi 132° .
 $17'$. Sic quoque sinus versus arcus
 $140^{\circ} 12' 20''$. reperietur
176834 per partem proportiona-
lem.

Haetenus de ijs quæ spectant
ad primam vsus Canonis par-
tem, nunc ad secundam huius
vsus partem pergamus.

4. *Cognito sinu recto, inuenire ei
respondentem arcum, vel angu-
lum.*

Quære sinum cognitum in
area columnæ sinuum, & è re-
gione in columna sinistra repe-
ries minuta arcus, qui proposito
sinui respondet, & gradus illius
arcus in vertice, aut in calce
huius columnæ. Sed si dictum
sinum, vt sæpe contingere so-

let, non inueneris ad vnguem,
 sume loco illius proxime mino-
 rem vel maiorem, qui nimirum
 paucioribus unitatibus à pro-
 posito sinu distat: hic eum dabit
 tibi arcū satis præcisum, diffe-
 rentē à vero arcu aliquot tantū-
 modò secundis, quæ differentia
 non parit notabilem errorem.

*V. G. Detur sinus rectus 49090,
 cuius arcus inueniendus sit. Quare
 in columna sinuum, dictum nume-
 rum propositum 49090, & inuen-
 to hoc, video in columna sinistra ar-
 cum respondentem sinui proposito
 esse 29 grad. 22'. Sic etiam volens
 inuenire arcum sinus 87580, quare
 hunc numerum in ipsa columna si-
 nuum, sed quia non inuenio, loco il-
 lius accipio sinum 87575 proxi-
 me minorem, qui paucioribus uni-
 tatibus à sinu cognito distat, quam
 sinus 87589 proxime maior: cui
 sinui proxime minori respondent in*

C A N O N I S.

calce columna sinistra gradus 61,
 Et è regione in eadem columna 8'.
 Arcum ergo 61 gr. 8' dico deberi si-
 nui proposito. Nam unitates illa,
 quibus sinus propositus à sinu di-
 cti arcus differt, non inducunt erro-
 rem notabilem. Si tamē arcum præ-
 cisiorem habere volueris, id est, in
 gradibus, minutis Et secundis, acci-
 pies partem proportionalem, ponen-
 do in primo termino regula trium,
 differentiam inter sinum proximè
 minorem, Et sinum proximè maio-
 rem, quæ erit 14; Et in secundo
 termino 60''; sed in tercio differen-
 tiam inter sinum propositum, Et
 proximè minorem, quæ erit 5: Et re-
 gula facta prouenient fere 21''.
 quæ addita arcui sinus proximè mi-
 noris, dabūt 61 grad. 8'. 21'' pro ar-
 cu respondēte sinui proposito 87580

Hoc autem ita intelligendum
 est, si cognoscatur arcus dicti si-
 nus esse minor quadrante: Nam

idem sinus responderet duobus arcibus semicirculum conficiē-
tibus ; ideoque si noscatur di-
ctus arcus sinus propositi debe-
re esse maior quadrante circuli,
oportebit subtrahere ex gradi-
bus 180 arcum inuentum, & su-
pererit arcus maior quadrante,
qui responderet dicto sinui pro-
posito.

*5. Cognito sinu complementi, res-
pondentem ei arcum elicere.*

Quære sinum propositum in
area columnę sinuum, & inuento
hoc è regione illius in columna
sinistra alterius paginæ, reperies
arcum quæsitum, *vel aliter*. Quæ-
re arcum sinui cognito tãquam
recto respondentem, & inuento
illo arcu subtrahe hunc ex qua-
drante circuli, & arcus quæsitus
restabit, si debet esse minor qua-
drante ; sed si debet esse maior,
adde illum arcum inuentum

C A N O N I S.

quadranti, & fiet arcus quæ-
situs.

*V. G. Detur 75010 sinus comple-
menti arcus quadrante minoris; oportet
inuenire arcum illum. Quæro
ipsum sinum in columna sinuum, &
non inueniens, loco illius accipio si-
num propiorem 75011, cui respon-
det arcus 48 gr. 36'. quem subtraho
ex quadrante, & restant 41 gr. 24'.
pro arcu quasito, qui inuenitur etiam
sine facienda dicta subtractione, aspi-
ciendo tantum in pagina sinistra è
regione sinus inuenti 75011. Sed si
dictus arcus debuisset esse quadrante
maior, addidissem dictos 48. gr. 36'.
gradibus 90, & prouenissent 138 gr.
36'. pro ipso arcu quasito.*

6. Cognito sinus verso responden-
tem ei arcum reperire.

Si datus sinus versus minor est
sinu toto, subtrahe eum ex sinu
toto, & restabit sinus comple-
menti arcus qui quæritur; ex quo

elicies arcum vt supra dictum est. Si vero datus sinus versus sinum totum superat, subtrahe ex eo sinum totum, & remanebit sinus rectus arcus, qui quadranti adiectus arcum quæsitum conficiet.

V. G. detur sinus versus 94940, cuius arcus sit inueniendus. Subtrahō illum ex sinu toto 100000, & restant 5060 pro sinu cōplementi arcus quæsiti, ex quo inuenietur arcus 87, gr. 6'. Iterum detur sinus versus 121600 : oportet inuenire arcum ei respondentem. Ex hoc subduco sinum totum 100000, relinqueturque 21600 sinus rectus, cuius arcus est 12 gr. 27'. qui adiectus quadranti efficiet arcum quæsitum 102 gr. 27'.

Quicquid autem supra diximus de sinu tam recto, quam complementi, debet etiam intelligi de tangentibus, & secantibus : Nam perinde in his pro-

CANONIS.

cedendum est ac in illis, sola tantum columnarum differentia obseruanda.

V. G. Si queratur tam tangens, quam secans arcus 23 gr. 42', inueniuntur 23 grad. in vertice canonis & 42' in columna sinistrarum, e regione quorum min. in columna tangentium reperietur 43897 pro tangente arcus propositi, & in columna secantium 109211 pro secante eius. Sed tangens complementi eiusdem arcus erit 227806, & secans 248954. Item si exquirendus esset arcus respondens huic tangenti 68000, Inueniretur fere 34 gr. 13'. Sed dato 145000 pro secante arcus, inuenietur is arcus esse fere 46 gr. 24'.

Quod si, cum ex arcu dato queratur tangens aut secans, prater gradus & minuta adhareant etiam secunda, aut queratur arcus ex tangente vel secante data, qua in canone non inueniatur, utendum erit parte pro-

TRIANGULA

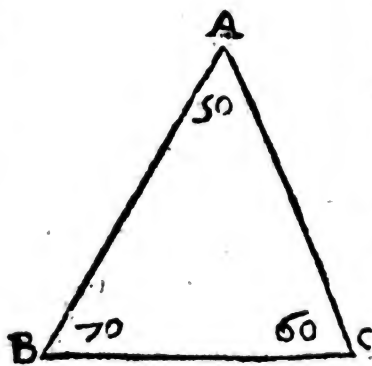
proportionales iuxta modum declaratum num. 1. & 4.

His expositis, nunc docebitur paucis

Calculus & supputatio triangulorum planorum, vel rectilineorum; & primum rectangulorum.

1. *Datis tribus angulis cuiuscunque trianguli rectilinei, datur proportio laterum.*

Nam latera trianguli se habent ad inuicem, ut sinus angulorum ipsis oppositorum. Quare si anguli trianguli ABC, sint gradus 70, gr. 60, & gr. 50, latera AC, AB, & BC habebunt



RECTILINEA.

eandem proportionem quam
93669, 86603, & 76604,
qui sunt sinus angulorum op-
positorum ipsis lateribus, hoc est
AB erit ad BC, vt 86603 ad
76604, & AB ad AC, vt 86603
ad 93969, & AC ad BC, vt 93969
ad 76604.

2. *Data uno latere, cum uno angulo
acuto trianguli plani rectanguli;
reliqua duo latera cognoscere.*

Cum alter angulorum acut. sit al-
terius complementum, noscuntur
omnes anguli. Fiat autem, vt si-
nus anguli dato lateri oppositi
ad latus datum, ita sinus cuiusli-
bet reliquorum angulorum ad
aliud: prodibitque latus huic an-
gulo accepto oppositum. Ita-
que in triangulo ABC, cuius an-
gulus B rectus est, dato latere
AC hexapodum 50, angulo

TRIANGVLA

vero C gr. 40. ita vt alter angulus sit grad. 50: A
 per regulam auream dicemus, si sinus anguli B
 100000 dat AC B
 hexap. 50, quid dabit sinus anguli A 76604, & quid sinus anguli C 64279? inueniemusque
 latus BC hexap. $38\frac{1}{10}$, & AB hexap. $32\frac{7}{10}$ ferè.

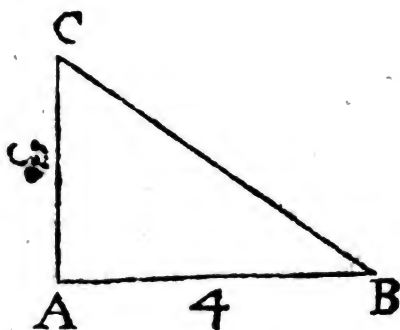


3. *Datis duobus lateribus circa angulum rectum trianguli plani, inuenire duos angulos acutos, & hypotenusam.*

Hypotenusa, aut basis trianguli rectanguli est latus recto angulo oppositum. Quadratis laterum datorum additis simul, radix quadrata huius aggregati erit hypotenusa quæsitæ: deinde fiat, vt hypot. ad sin. tot. ita alterutrum datorum laterum ad

RECTILINEA.

aliud, prouenietque sinus anguli illi lateri assumpto oppositi. Quamobrem in triángulo ABC,



cuius angulus A rectus est, dato latere AB hexap. 4, & lat. AC hex. 3. inuenietur hypot. BC sic: Addantur simul quadrata duorum laterum datorum, nimirum 16 & 9, & aggregatum erit 25, cuius radix quadrata est 5, pro hypot. quæsitâ BC. Quod attinet ad angulos, inuenientur dicendo per regulam trium, si hypot. hexap. 5 dat sinum tot. 100000, quid dabit AB hex. 4?

TRIANGULA

prodibitque 80000 pro sinu anguli C, illi lateri oppositi, qui idcirco erit grad. 53. 7'. 49''. & ideo reliquus B est grad. 36. 52'. 11''.

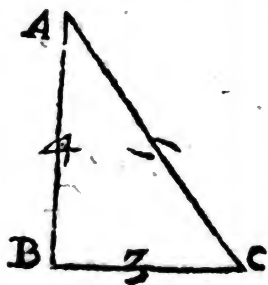
Alt. analogia. Vt alterutrum laterum datorum ad sinum totum, ita alterum latus datum ad tangentem anguli huic posteriori lateri oppositi: Deinde vt sinus alterutrius angulorū acutorum ad latus illi oppositum, ita sinus totus ad hypotenusam: vel vt sinus totus ad vtrumuis laterum datorum, ita secans anguli accepto lateri adiacentis ad hypotenusam.

4. *Data hypotenusa, cum alterutro laterum triang. plani rectang. reperire duos angulos acutos, & alterum latus.*

Subtrahatur quadratum lateris dati ex quadrato hypot. &

RECTILINEA.

restabit quadratum alterius lateris, cuius radix quadrata erit mensura illius lateris. Deinde fiat, ut hypotenusa ad sinum totum, ita utrumvis laterum ad aliud, & prodibit sinus anguli acuti huic lateri assumpto oppositi. In triangulo ABC, cuius angulus B rectus est, hypotenusa AC detur 5. ped. & latus BC p. 3. Oportet ex his angulos acutos A, C, & alterum latus AB indagare. Aufertur quadratū lateris BC, ex quadrato hypot. nempe 9 ex 25, & relinquetur quadratum lateris



AB, nimirum 16, cuius radix quadrata 4 dabit latus AB ped.

4. Dicimus iam, si hyp. p. 5. dat sinum tot. 100000, quid dabit

TRIANGULA

AB p. 4? prodibit 80000 sinus anguli C sumpto lateri oppositi; ideoque ang. C erit grad. 53. 7'. 49''. ac proinde reliquus angulus A grad. 36. 52'. 11''.

Alt. anal. Vt hypotenusa ad sinum totum, ita datum latus ad sinum anguli huic lateri oppositi: deinde vt sinus totus ad hyp. ita sinus anguli lateri quæsito oppositi ad latus quæsitum.

§. *Trianguli plani rectanguli datis tribus lateribus, datur anguli acuti.*

Nam vt hypotenusa ad sinum totum, ita vnumquodque latus ad sinum anguli cui opponitur. Quare in triangulo rectangulo ABC, data hypoth. AC ped. 5. cum laterib. AB p. 4. & BC p. 3. inueniemus ang. acutos A & C, dicendo per regulam trium, si hypot. AC p. 5. dat sin. tot. 100000, quid dabit AB p. 4? prodibit sinus anguli C sumpto lateri

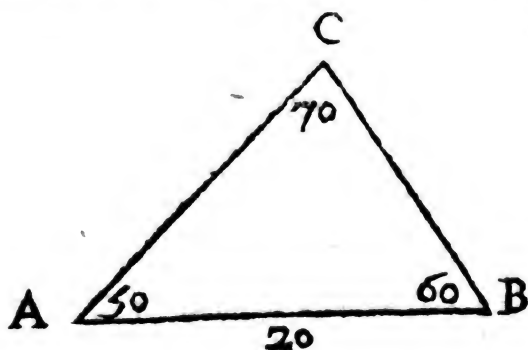
RECTILINEA.

oppositi partium 80000 : ac
proinde is ang. C erit grad. 53.
7'.49''. Idcirco reliquus angu-
lus A grad. 36.52'.11''.

Absolutus iam est rectangulo-
rum triangulorum calculus, se-
quitur triangulorum non re-
ctangulorum calculus.

6. *Datis omnibus angulis trianguli
plani, & uno latere, reliqua duo la-
tera cognoscere.*

Ut sinus anguli lateri dato op-
positi ad latus datum, ita sinus
reliquorum angulorum ad latera



opposita. Quare in triangulo

TRIANGULA

A B C, datis tribus angulis, nimirum A grad. 50, B grad. 60 C grad. 70, & etiam lat. AB hexap. 20, inueniemus reliqua duo latera AC, BC, dicendo sic: Si sinus anguli C 93969 dat AB hexap. 20, quid dabit sinus ang. A 76604, & quid sinus ang. B 86603? inuenietur latus BC hex. 16 $\frac{2}{3}$ ferè, & lat. AC hex. 18 $\frac{1}{2}$ fere.

7. *Datis tribus lateribus trianguli plani à cuius angulo maximo ad oppositum latus perpēdicularis demittatur; segmenta illius lateris à perpendiculari facta inuenire.*

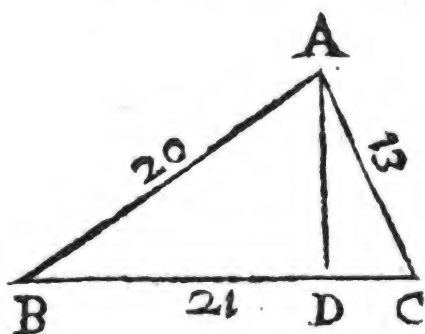
Fiat, vt basis (id est latus, in quod cadit perpendicularis) ad summam aliorum duorum laterum ita differētia eorundē laterum ad aliud; reperieturque numerus, qui ex basi subductus relinquet numerum, cuius semissis dabit minus segmentum basis, quod ex tota basi subductum,

relin-

RECTILINEA.

relinquet segmentum maius.

In triangulo ABC, cuius omnia tria latera data sint, nempe AB ped. 20, AC ped. 13, & BC ped. 21. perpendicularis AD ab angulo maximo A demissa in latus maximum BC, diuidit hoc latus in duo segmēta inæqualia BD, DC, quorū minus est DC.



Oportet cognoscere quāta sint illa segmenta. Dicemus igitur per auream regulam, si basis BC 21 p. dat. 33 p. aggregatum duorum laterum AB, AC, quid dabit differētia eorum laterum nempe 7? inueniemusque si pro

P

TRIANGULA

differentia segmentorū basis, qua ablata ex basi 21, relinquitur numerus 10, cuius dimidium 5 est segmentum DC, ac proinde reliquum BD erit 16, nempe residuum basis BC.

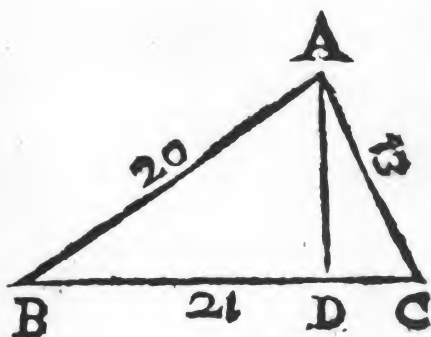
Aliter. De summa quadratorū basis & vtriusvis laterū, subtrahere quadratum alterius lateris; semissem reliqui divide per basin, & habebis segmentū baseos inter perpendiculum, & latus primò sumptum interiacens.

8. *Datis duobus lateribus trianguli plani cum angulo ab ipsis comprehenso, invenire tertium latus, & reliquos angulos.*

Vt aggregatum datorum duorum laterum ad differentiam eorundem, ita tangens semissis summe angulorum ignotorum ad tangentem semissis differentiae eorum angulor. ac proinde dabuntur duo anguli

RECTILINEA.

ignoti, enim uero dimidia differentia duarum magnitudinū adiecta dimidiæ summæ earundē efficit magnitudinē maiorem, ablata minorem. Postea per probl. 6. reperietur tertium latus. Sic in triangulo ABC, datis duobus lateribus AC 13, &



BC 21 pedum, vnà cum angulo C 67 grad. 22' . 48'', inueniētur anguli A & B, ac etiam latus AB hoc modo. Summa laterū datorum est 34, & differentia eorum 8: summa angulorū ignotorum

TRIANGULA

A & B est 112 grad. 37'. 12''. residuum scilicet anguli dati ad semicirculum: dimidium huius summe est 56 gr. 18'. 36''. eius tangens 150000. Dico igitur, si summa datorum lat. 34 dat differentiam 8, quid dabit tangens semissis summe angulorū ignot. 150000? Inuenio 35294 tangentē arcus 19 gr. 26'. 24''. semissis differentie ang. ignot. qui arcus ablatus ex semisse summa ang. ignotorū, hoc est, ex 56 gr. 18'. 36''. relinquet minorem angulum B, grad. 36. 52'. 12''. sed idem arcus additus semissi dictę componit maiorem angulum A grad. 75. 45'. Iam autem noscuntur omnes anguli, idcirco per 6. prob. reperietur latus AB ped. 20.

Aliter. Ducatur ad maius latus BC ab angulo opposito A, perpendicularis AD, quę intra

RECTILINEA.

triangulum ABC cadet, & diuidet illud in duo triangula rectang. ADB, ADC: hoc autem triang. ADC habet hypot. AC notam cum angulo acuto C; ac proinde per 2 probl. inueniuntur duo latera AD, CD; & deinde per 3. prob. reperietur angulus B cum latere AB.

Quod si angulus datus esset obtusus, perpendicularis AD extra triangulum caderet, nihilominus triangulum ADC semper haberet hypot. notam cum vno angulo acuto, complemento scilicet anguli dati.

9. *Datis duobus lateribus trianguli rectilinei, cum angulo vni eorum opposito; inuenire tertium latus, & reliquos angulos.*

Fiat, vt latus datum dato angulo oppositum ad sinum huius anguli dati, ita alterum latus datum ad aliud; reperietur-

TRIANGULA

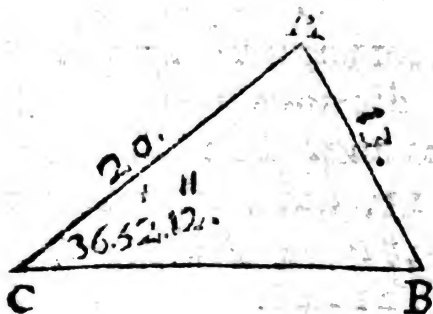
que sinus anguli huic alteri lateri oppositi ; idcirco noscentur duo anguli , quibus ex semicirculo ablatis, relinquitur tertius. Deinde iuxta 6. prob. fiat ut sinus dati anguli ad datum latus ei oppositum , ita sinus anguli inuenti quæsito latere oppositi ad aliud ; gigneturque tertium latus quæsitum.

Sed observandum est cum angulus notus est acutus, & minori lateri cognito oppositus, tunc angulum alteri dato lateri oppositum posse esse acutum & obtusum, & idcirco non potest dictus angulus definiri, nisi noscatur species eius, qui cum sit acutus reperietur in canone, sed si positus sit obtusus, accipiendum erit complementum ad semicirculum.

In triangulo plano ABC, sint data duo latera AB ped. 13, & AC p. 20; datusq; sit acutus angulus C grad. 36. 51'. 12". mi-

RECTILINEA.

nori lateri dato AB oppositus,



cum acuta specie anguli B alteri dato lateri AC oppositi. Oportet inuenire ex his tertium latus CB, & reliquos angulos A & B. Dicemus per regulam trium, si latus AB 13 dat sinum anguli C 60000, quid dabit latus AC 20? inueniemusque 92308 sinum anguli B; qui sinus in canone sinuum exhibet illum angulum B grad. 67. 22'. 48". quia species anguli acuta est, nā si obtusa esset ille angulus existeret 112 grad. 37'. 12". Ad doigi-

TRIANGVLA

tur illos angulos acutos C, B, & veniunt grad. 104. 15'. quibus ablatis ex grad. 180 relinquetur angulus A grad. 75. 45'. Iam dicemus per reg. auream, si sinus ang. C 60000, dat latus AB 13, quid dabit sin. ang. A 96923, inueniemusque latus CB ped. 21 ferè.

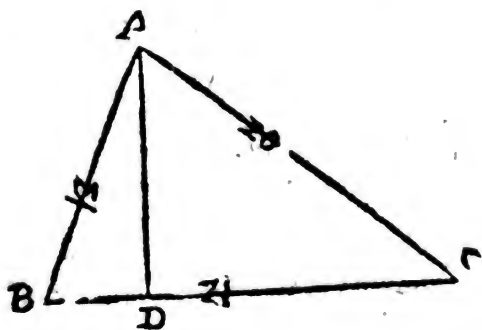
10. *Datis tribus lateribus trianguli plani, noscere tres angulos.*

Ducta ad maximum latus perpendiculari ex angulo opposito (vt nimirū perpendicularis semper intra triangulum cadat) inueniantur per prob. 7. segmenta basis facta à perpendiculari. Deinde fiat vt minimum latus ad sinum totum, ita minus segmentum basis ad aliud; gigneturque sinus complementi anguli medio lateri oppositi: Rursus fiat, vt medium latus ad sinum totum, ita maius segmentum

RECTILINEA.

basia ad aliud, procreabiturque sinus complementi anguli minimo lateri oppositi. Inuentis igitur duobus angulis ad basin, qui medio lateri, & minimo opponuntur, si eorum summa ex 180 grad. dematur, reliquus fiet tertius angulus lateri maximo oppositus.

In triangulo ABC sint data omnia latera, nempe AB hexap. 13, AC hexap. 20, & BC hexap. 21, oportet ex his inuenire tres angulos. In maximum latus BC,



ex oppposito angulo A, ducatur perpendicularis AD, quæ

TRIANGULA

intra triangulum cadet, & diuidet basin in duo segmenta BD, CD, quę inquirantur per probl. 7. dicendo, si 21 dant 33, quot dabunt 7? reperiēturque 11, pro differentia segmentorū; ac proinde minus segmentum BD est 5, & maius CD 16. Deinde dic, si minus latus AB 13 dat sin. tot. 100000, quid dabit min⁹ segm. BD 5? Inuenieturque 38462 sinus complementi anguli B, qui idcirco erit grad. 67. 22'. 47". Dic rursus, si medium latus AC 20 dat sin. tot. 100000, quid dabit maius seg. DC 16, reperieturque 80000 sinus complementi anguli C, qui idcirco erit 36. gr. 52'. 11". Duo igitur anguli B & C noscuntur, & aggregatum eorum est 104 gr. 15, quæ ablata ex gradu 180 relinquunt 75 gr. 45' pro tertio angulo A.

Aliter. *Fiat ut duplum rectan-*

RECTILINEA.

gulum sub cruribus ad differentiam inter quadrata crurum simul iuncta & quadratum basis, ita sinus totus ad aliud; gigneturque sinus complementi anguli ad verticem. Et si quidem quadratum basis cedat quadratis crurum simul iunctis erit angulus qui ad verticem existit acutus; si præster, obtusus; sed si æquale fuerit, rectus. Hoc autem angulo verticis sic inuento, inquirentur reliqui duo eodem modo, aut potius ut dictum est prob. præcedenti.

In triang. præced. rursus sunt data latera $AB\ 13$, $AC\ 20$, & $BC\ 21$. Rectangulum sub lateribus AB , AC est 260 ; Duplum eius 520 ; Quadratum basis BC est 441 ; sed quadrata laterum AB , AC sunt 169 & 400 ; aggregatum eorum est 569 , cuius ablato quadrato basis, relinquitur differentia 128 . Dicemus igitur

TRIANGULA

tur, si duplum rectang. 520 dat
differentiam 128, quid dabit si-
nus tot. 100000? Inueniemus-
que 24615 sinum complem. an-
guli A: ac proinde hic angulus
erit 75 grad. 45'. deinde dice-
mus rursus, si basis 21 dat 96923
sinum anguli oppositi A, quid
dabit latus AB 13? Inueniemus-
que 60000 pro sinu anguli C,
qui idcirco erit 36 gr. 52'. 12".
ac propterea tertius angulus B
erit 62 grad. 22'. 48".

Absolutus iam est triangu-
lorum rectilineorum calculus,
sequitur

*Calculus & supputatio trian-
gulorum sphaericorum;
& primum rectan-
gulorum.*

Triangulum sphaericum rectan-

SPHÆRICA.

gulum est, quod unum, vel duo, vel tres habet rectos angulos.

Cum autem triangulum sphaericum rectum habet tres rectos angulos, singula latera quadrantes sunt: Quamobrem datis tribus illis angulis, etiam latera ipsorum data sunt: Et contra.

Si vero triangulum habeat duos ang. rectos, duo latera illis angulis opposita sunt duo quadrantes: Quare datis duobus illis angulis rectis, data sunt etiam duo latera illis opposita.

Quod si præterea detur latus tertium, vel angulus tertius; dato horum alterutro, etiam alterum datum erit; cum latus tertium angulo tertio quadrantetenus oppositum, nihil aliud sit, quam anguli illius mensura per s. definit.

In his igitur duobus casibus nulla trigonometria est opus. Quod vero attinet ad triangula, quæ unum

TRIANGULA

tantum habent rectum angulum, cuiusmodi triangula ad dimensionem idonea sunt; ad triplicem formam reducuntur; aut enim habent acutos duos reliquos angulos, & horum semper tria latera sunt quadrantibus singulatim minora: vel obtusos duos reliquos angulos, & eorum duo latera rectum includentia sunt singulatim maiora quadrantibus, & latus recto oppositum est minus semper quadrante: vel acutum unum, & obtusum alterum, & horum latera acutum ambientia sunt semper maiora singulatim quadrantibus, & reliquum latus est quadrante minus.

His annotatis, veniamus ad praxim, & supputationem triangulorum sphaericorum rectangulorum.

.Data hypotenusa cum uno angulo obliquo, inuenire latus hunc angulo oppositum.

S P H Æ R I C A.

Fiat, vt sinus totus ad sinum
ypotenusæ, ita sinus anguli da-
ti ad aliud, reperieturque sinus
alteris huic angulo oppositi,
quod queritur. Hoc autē latus
quadrante minus erit, si datus
angulus fuerit acutus, maius
erit, si obtusus.

In triangulo rectang. ABC data

hypotenusæ

AC gr. 53, cum

ang. obl. C gr.

2. Oportet ex

his inuenire la-

tus AB. Dice-

mus igitur per

regul. auream,

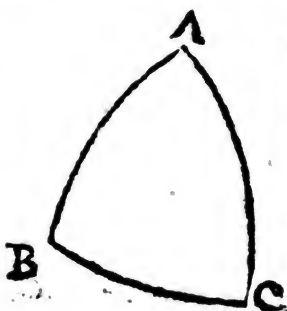
sinus tot. 100000 dat sin. AC

9864, quid dabit sinus ang. C

2992? inueniemusque 42322 pro

no arcus AB, ac proinde hoc latus

erit 25. gr. 2'. 18'.



Alt. analogia. Vt sinus totus ad
secantem complem. hypot. ita

TRIANGVLA

secans complem. ang. dati ad
secantem complement. lateris
quæsitum.

2. *Data hypotenusæ cum uno an-
gulo obl. inuenire latus adia-
cens.*

Fiat, ut sinus totus ad sinum
compl. ang. noti, ita tangens
hypot. ad aliud, procreabitur
que tangens lateris quæsitum: quod
quadrante minus erit, si hypot.
fuerit minor quadrante, & da-
tus angulus acutus; aut si hypot.
quadrante fuerit maior, & an-
gulus datus obtusus: Idem vero
latus erit quadrante maius, si hy-
pot. fuerit minor quad., & datus
ang. obtusus; aut si hyp. fuerit
quad. maior, & datus angulus
acutus.

*In triangulo rectang. ABC, da-
ta sit hypot. AC grad. 50, cum ang.
A gr 40. Ad inueniendum latus ad-
iacens AB, dicemus per regulam
trium*

SPHÆRICA.

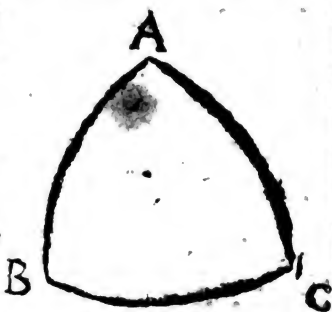
trium, si sinus tot. 100000 dat sin. compl. ang. dati A 76604, quid dabit tang. hyp.

AC 119175? inueniemusque

91293 pro tan-

gente lateris quæsitæ AB, quod

idcirco erit gr.



Alt. analogia. Vt sinus totus ad secantem anguli dati, ita tangens complementi hypot. ad tangentem compl. lateris quæsitæ.

3. Data hypotenusa cum alterutro angulorum obliq. inquirere alterum angulum obliquum.

Fiat, vt sinus totus ad sinum compl. hypot. ita tangens anguli dati ad aliud, reperieturque tangēs compl. ang. quæsitæ.

Q

TRIANGULA

tur illos angulos acutos C, B, & veniunt grad. 104. 15'. quibus ablatis ex grad. 180 relinquetur angulus A grad. 75.45'. Iam dicemus per reg. auream, si sinus ang. C 60000, dat latus AB 13, quid dabit sin. ang. A 96923. inueniemusque latus CB ped. 21 ferè.

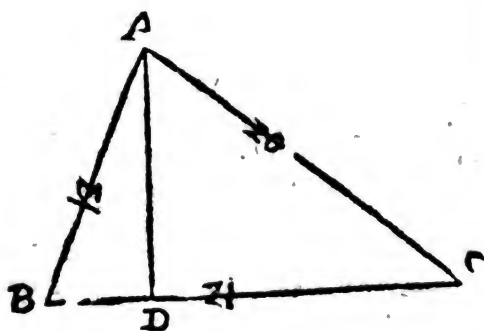
10. *Datis tribus lateribus trianguli plani, noscere tres angulos.*

Ducta ad maximum latus perpendiculari ex angulo opposito (vt nimirum perpendicularis semper intra triangulum cadat) inueniantur per prob. 7. segmenta basis facta à perpendiculari. Deinde fiat vt minimum latus ad sinum totum, ita minus segmentum basis ad aliud; gigneturque sinus complementi anguli medio lateri oppositi: Rursus fiat, vt medium latus ad sinum totum, ita maius segmentum

RECTILINEA.

basis ad aliud, procreabiturque sinus complementi anguli minimo lateri oppositi. Inuentis igitur duobus angulis ad basin, qui medio lateri, & minimo opponuntur, si eorum summa ex 180 grad. dematur, reliquus fiet tertius angulus lateri maximo oppositus.

In triangulo ABC sint data omnia latera, nempe AB hexap. 13, AC hexap. 20, & BC hexap. 21, oportet ex his inuenire tres angulos. In maximum latus BC,



ex oppposito angulo A, ducatur perpendicularis AD, quæ

TRIANGVLA

intra triangulum cadet, & diuidet basin in duo segmenta BD, CD, quę inquirantur per probl. 7. dicendo, si 21 dant 33, quot dabunt 7? reperieturque 11, pro differentia segmentorū; ac proinde minus segmentum BD est 5, & maius CD 16. Deinde dic, si minus latus AB 13 dat sin. tot. 100000, quid dabit min⁹ segm. BD 5? Inuenieturque 38462 sinus complementi anguli B, qui idcirco erit grad. 67. 22'. 47". Dic rursus, si medium latus AC 20 dat sin. tot. 100000, quid dabit maius seg. DC 16, reperieturque 80000 sinus complementi anguli C, qui idcirco erit 36. gr. 52'. 11". Duo igitur anguli B & C noscuntur, & aggregatum eorum est 104 gr. 15, quę ablata ex gradu 180 relinquunt 75 gr. 45' pro tertio angulo A.

Aliter. Fiat ut duplum rectan-

RECTILINEA.

gulum sub cruribus ad differentiam inter quadrata crurum simul iuncta & quadratum basis, ita sinus totus ad aliud; gigneturque sinus complementi anguli ad verticem. Et si quidem quadratum basis cedat quadratis crurum simul iunctis erit angulus qui ad verticem existit acutus; si præster, obtusus; sed si aequale fuerit, rectus. Hoc autem angulo verticis sic inuento, inquirentur reliqui duo eodem modo, aut potius ut dictum est prob. præcedenti.

In triang. præced. rursus sunt data latera AB 13, AC 20, & BC 21. Rectangulum sub lateribus AB, AC est 260; Duplum eius 520: Quadratum basis BC est 441; sed quadrata laterum AB, AC sunt 169 & 400; aggregatum eorum est 569, cuius ablato quadrato basis, relinquitur differentia 128. Dicemus igitur

TRIANGULA

tur, si duplum rectang. 520 dat
differentiam 128, quid dabit si-
nus tot. 100000? Inueniemus-
que 24615 sinum complem. an-
guli A: ac proinde hic angulus
erit 75 grad. 45'. deinde dice-
mus rursus, si basis 21 dat 96923
sinum anguli oppositi A, quid
dabit latus AB 13? Inueniemus-
que 60000 pro sinu anguli C,
qui idcirco erit 36 gr. 52'. 12".
ac propterea tertius angulus B
erit 62 grad. 22'. 48".

Absolutus iam est triangu-
lorum rectilineorum calculus,
sequitur

*Calculus & supputatio trian-
gulorum sphericorum;
& primum rectan-
gulorum.*

Triangulum sphericum rectan-

SPHÆRICA.

ulum est, quod unum, vel duo, vel res habet rectos angulos.

Cum autem triangulum sphæricum rectum habet tres rectos angulos, singula latera quadrantes sunt: Quamobrem datis tribus illis angulis, etiam latera ipsorum data sunt: Et contra.

Si vero triangulum habeat duos ang. rectos, duo latera illis angulis opposita sunt duo quadrantes: Quare datis duobus illis angulis rectis, data sunt etiam duo latera illis opposita.

Quod si præterea detur latus tertium, vel angulus tertius; dato eorum alterutro, etiam alterum datum erit; cum latus tertium angulo tertio quadrantetenus oppositum, nihil aliud sit, quam anguli illius mensura per s . definit.

In his igitur duobus casibus nulli trigonometria est opus. Quod vero attinet ad triangula, quæ unum

TRIANGULA

tantum habent rectum angulum, cuiusmodi triangula ad dimensionem idonea sunt; ad triplicem formam reducuntur; aut enim habent acutos duos reliquos angulos, & horum semper tria latera sunt quadrantibus singulatim minora: vel obtusos duos reliquos angulos, & eorum duo latera rectum includentia sunt singulatim maiora quadrantibus, & latus recto oppositum est minus semper quadrante: vel acutum unum, & obtusum alterum, & horum latera acutum ambientia sunt semper maiora singulatim quadrantibus, & reliquum latus est quadrante minus.

His annotatis, veniamus ad praxim, & supputationem triangulorum sphaericorum rectangulorum.

.Data hypotenusæ cum uno angulo obliquo, inuenire latus huic angulo oppositum.

SPHÆRICA.

Fiat, ut sinus totus ad sinum
hypotenusæ, ita sinus anguli da-
ti ad aliud, reperieturque sinus
alteri huic angulo oppositi,
quod queritur. Hoc autē latus
quadrante minus erit, si datus
angulus fuerit acutus, maius
ero, si obtusus.

In triangulo rectang. ABC data

hypotenusæ

AC gr. 53, cum

ang. obl. C gr.

2. Oportet ex

his inuenire la-

tus AB. Dice-

mus igitur per

regul. auream,

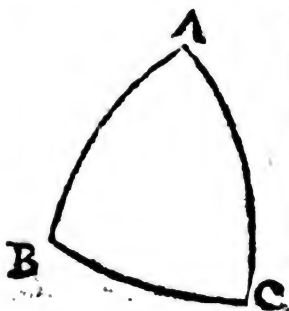
sinus tot. 100000 dat sin. AC

9864, quid dabit sinus ang. C

2992? inueniemusque 42322 pro

no arcus AB, ac proinde hoc latus

erit 25. gr. 2'. 18''.



Alt. analogia. Ut sinus totus ad
secantem complem. hypot. ita

TRIANGVLA

secans complem. ang. dati ad
secantem complement. lateris
quæſiti.

2. *Data hypotenusa cum uno an-
gulo obl. inuenire latus adia-
cens.*

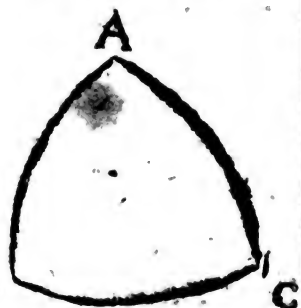
Fiat, vt sinus totus ad sinum
compl. ang. noti, ita tangens
hypot. ad aliud, procreabitur
que tãgens lateris quæſiti: quod
quadrante minus erit, si hypot.
fuerit minor quadrante, & da-
tus angulus acutus; aut si hypot.
quadrante fuerit maior, & an-
gulus datus obtusus: Idem vero
latus erit quadrãte maius, si hy-
pot. fuerit minor quad. & datus
ang. obtusus; aut si hyp. fuerit
quad. maior, & datus angulus
acutus.

*In triangulo rectang. ABC, da-
ta sit hypot. AC grad. 50, cum ang.
A gr. 40. Ad inueniendum latus ad-
iacens AB, dicemus per regulam
trium*

SPHÆRICA.

trium, si sinus tot. 100000 dat sin.
complem. ang. dati A 76604, quid
dabit tang. hyp.

AC 119175? in-
ueniemusque
91293 pro tan-
gente lateris
quæsit AB , quod
idcirco erit gr.
 $42, 23' . 31''$.



Alt. analogia. Vt sinus totus
ad secantem anguli dati, ita
tangens complementi hypot.
ad tangentem compl. lateris
quæsit.

3. *Data hypotenusa cum alteru-
tro angulorum obliq. inquirere
alterum angulum obliquum.*

Fiat, vt sinus totus ad sinum
compl. hypot. ita tangens an-
guli dati ad aliud, reperietur-
que tangēs compl. ang. quæsit.

Q

TRIANGVLA

Hic vero erit acutus, si hypotenusæ fuerit quadrante minor, & datus angulus acutus, aut si hypot. fuerit maior quadrante, & datus ang. obtusus. At angulus idem quæ situs erit obtusus, si hypot. quad. minor fuerit, & angulus datus obtusus, aut si hypot. fuerit quadrante maior, & datus angulus acutus.

In triangulo rectang. ABC data sit basis AC gr. 66. Et angulus A grad. 25. Et oporteat colligere ex his reliq. ang. obl. C. Dicemus per reg. aut. si sin. tot. 100000 dat sin. compl. hypoten. AC 40674, quid dabit tang. ang. dati A 70021? inueniemusque 28480 pro tangente compl. anguli C, qui idcirco erit 74 gr. 6'. 11".

Alt. analogia. Vt tangens complementi anguli dati ad sinum compl. hypot. ita sinus totus ad

SPHÆRICA.

tang.compl.anguli quæſiti.

4. *Data hypotenuſa cum alteru-
tro laterum, inuenire angulum
huius lateris oppoſitum.*

Fiat, vt ſinus hypot. ad ſi-
num totum, ita ſinus lateris no-
ti ad aliud, inuenieturque ſi-
nus ang. quæſiti. Hic autem
angulus erit acutus, ſi hypot.
fuerit quadrante minor; obtu-
ſus vero, ſi maior.

*Eſto triangulū rect. ABC, in quo
data ſit hypotenuſa AC gr. 50,
cum latere AB 42 gr. 24', vt co-
gnoſcatur angulus C illi lateri op-
poſitus, dic per reg. trium, ſi ſin.
hypot. AC 76604 dat ſin. tot.
100000, quid dabit ſin. lat. AB
67430? reperieturque 88024 ſi-
nus ang. C, qui idcirco erit 61 gr.
40'.17'.*

*Alt. analogia. Vt ſinus totus
ad ſinum hypotenuſæ, ita ſe-*

Q ij

TRIANGULA

cans compl. lat. noti ad secantem compl. anguli quæsit.

5. *Data hypotenusa cum alterutro laterum, exquirere angulum ab his comprehensum.*

Fiat, ut sinus totus ad tangentem compl. hypot. ita tangens lateris dati ad aliud, produceturq; sinus cōpl. ang. quæsit. Hic autē acutus erit, si tam hypot. quam latus datum fuerit quadrante minus, vel maius: obtusus vero, si alterutrum datorū fuerit quadrante maius, & alterum minus.

In triangulo rect. ABC detur hypotenusa AC grad. 50, cum latere AB gr. 42. 24'. Ex his quaeratur angulus A ab his comprehensus. Dicemus per reg. aur. si sin. tot. 100000 dat tang. compl. hypoten. AC 83910, quid dabit tang. lateris

SPHÆRICA.

*AB 91313 ? inueniemusque 76622
pro sinu compl. anguli A; qui id-
circo erit 39 gr. 59'. 4".*

*Alt. analogia. Ut tangens hypo-
tenuſæ ad tangentem lateris
dati, ita sinus totus ad sinum
complementi anguli quaſiti.*

*6. Data hypotenuſa cum alterutro
laterum, inquirere alterum la-
tus.*

Fiat, ut sinus compl. lateris
dati ad sinum totum, ita sinus
compl. hypotenuſæ ad aliud;
gigneturque sinus compl. alte-
rius lat. quod queritur. Hoc autē
latus erit minus quadrante ſi tã
hypot. quam latus datum qua-
drante minus fuerit: maius vero
quadrante, ſi vel hypot. fuerit
maior, & latus datum minus
quadrante, vel hypot. minor,
& datum latus quadrante maius.

Q iij

TRIANGVLA

In triangulo rectang. ABC dat
 sit hypot. AC gr. 50 , & latus AB
 gr. $42.24'$. ad inueniendum reliquum
 latus BC , dicemus per aur. reg. si sin
 compl. lat. AB
 73846 dat sin.
 100000 , quid
 dabit sin. compl.
 hyp. AC 64279 ?
 inueniemusque
 87045 sinum
 cōpl. lateris qua-
 sit BC ; ac pro-
 inde hoc latus
 erit 29 gr. $29' 21''$.



Alt. analogia. Vt sinus totus ad
 sinum compl. lateris dati, ita se-
 cans hypot. ad secantem lateri
 quæsit.

7. Dato alterutro laterum cum
 angulo ei opposito, reperire hypo-
 tensam: si modo constet, nun-
 quadrante minor sit, an maior

SPHÆRICA.

vel an alter angulus obl. sit acutus, obtususve; vel denique an alterum latus sit quadrante minus, vel minus.

Fiat, ut sinus anguli dati ad sinum lateris noti, ita sinus totus ad aliud, produceturque sinus hypot. quæ quadrante minor, est (nisi aliundo constet) cum uterque angulorum obliq. acutus sit, vel obtusus; aut cum duo latera sunt eiusdem speciei: eadem vero hypot. quadrante maior est, cum duo anguli obliqui; vel duo latera, sunt diuersarum specierum.

In triangulo rectangulo ABC notum sit latus AB gr. 42.24'. cum angulo ei opposito C grad. 61. 40'. Oportet ex his inuenire hypotensam AC quadrante minorem: dicemus per reg. trium, si sin. ang. dati 88020 dat 67430 sin. lat.

Q iiiij

TRIANGVLA

Noti AB , quid dabit sinus tot.
 100000 ? provenietque sinus hy-
 pot. AC 76608 , ideoque hac hy-
 potenusæ erit $50^{\circ} gr. 12'$, quia debet
 esse minor quadrante.

Alt. analogia. Vt sinus totus ad
 sinum anguli dati, ita secans
 compl. lateris noti ad secan-
 tem compl. hypotenusæ.

8. *Data alterutro laterum cum
 angulo ei opposito, inuenire alterū
 angul. obl. eidem lateri adiac. si
 modo constet, num ille angulus
 quæsitus sit acutus, obtususve;
 vel an hypot. aut latus alterum
 quadrante minus sit, vel maius.*

Fiat, vt sinus complementi
 lateris dati ad sinum compl.
 anguli dati, ita sinus totus ad
 aliud; produceturque sinus an-
 guli quæsit: Hic autem angu-
 lus erit acutus, (nisi aliunde

S P H Æ R I C A.

cōstet) si alterū latus fuerit quadrante minus; obtusus vero, si maius. Pari ratione, si hypot. fuerit quadrante minor, & angulus datus acutus, erit quæsitus quoque angulus acutus: si verò obtusus, obtusus. At si hypotenusa fuerit maior quadrante, & datus angulus acutus, erit quæsitus angulus obtusus; si vero obtusus, acutus.

In triangulo rectangulo ABC sit datum latus AB gr. 42. 24. cum angulo ei opposito C gr. 61. 40'. Oportet inuenire ang. obl. A, quem ponimus esse acutum. Per regulam trium dicemus, si sin. compl. lat. AB 73846 dat sin. compl. ang. C 47460, quid dabit sin. tot. 100000? inueniemusque 64269 pro sinu anguli quæsiti A; qui idcirco erit 32 gr. 59', 34''. cum positus sit acutus.

Alt. analogia. Ut sinus totus

TRIANGULA

ad sinum compl. lateris dati,
ita secans noti anguli ad secan-
tem compl. anguli quæsi.

9. *Dato alterutro laterum cum
angulo ei opposito, inuestigare
alterum latus: si modo constet,
num quadrante minus sit, aut
maius; vel an alter angulus obl.
sit acutus, obtususve; vel deniq;
num hypotenuſa sit minor qua-
drante, aut maior.*

Fiat, ut sinus totus ad tangen-
tem lateris noti, ita tangens
compl. anguli dati ad aliud; re-
perieturque sinus lateris quæ-
ſiti: quod latus quadrante erit
minus (nisi aliunde constet) si
alter angulus obliq. fuerit acu-
tus: maius vero, si obtusus.
Pari ratione minus erit, si hy-
potenuſa fuerit minor qua-

SPHÆRICA.

drante, & datum latus minus quoque quadrante: at si hypotenusa fuerit minor quadrante, & datū latus maius, ipsum latus quæsitum erit quadrante maius: denique si tam hypot. quā latus datum fuerit quadrante maius, erit quæsitum latus minus quadrante; maius autem, si hypotenu. fuerit maior quadrante, & datum latus minus.

In triangulo rect. ABC notum sit latus AB grad. 42. 24'. cum angulo ei opposito C 61 gr. 40'. Oportet ex his alterum latus indagare. Per regulam auream dicemus si sin. tot. 100000 dat 91313. tang. lat. AB, quid dabit tangens compl. ang. C 53920? inueniemusque 49236 pro sinu lateris quæsit BC, quod idcirco erit 29. gr. 29. 46". vel 150 grad. 30'. 14'.

TRIANGVLA

Alt. analogia. Vt sinus totus ad tangentem compl. lateris dati, ita tangens anguli noti ad secantem compl. lateris quæsit.

10. *Dato alterutro laterum cum angulo obliquo ei adiacente, indagare ang. illi lateri oppositum.*

Fiat, vt sinus tot⁹ ad sinū anguli dati, ita sinus compl. lateris noti ad aliud; produceturque sinus complementi anguli quæsit: qui erit acutus, si datum latus fuerit quadrante minus; obtusus vero, si maius.

In triangulo rect. ABC, detur latus BC 29 gr.

29'. cum angulo C 61 gr. 40'.

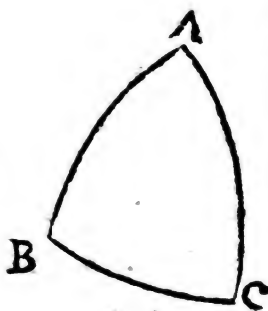
Ad inueniendū

angulum A la-

teri dato opposi-

tū, discemus per

regulam aureā,



SPHÆRICA.

si sinus tot. 100000 dat 88020 sinus ang. C, quid dabit 87050 sinus compl. lateris BC? inueniemusque 76621 pro sinu compl. ang. quæsitæ; qui idcirco erit 39 gr. 59'. 6''.

Alt. analogia. Vt sinus totus ad secantem lateris dati, ita secans complem. ang. dati ad secantem ang. quæsitæ.

II. *Dato alterutro laterum cum angulo ei adiacente, inuenire alterum latus dicto angulo oppositum.*

Fiat, ut sinus totus ad sinum lateris dati, ita tangens anguli dati ad aliud, procreabiturque tangens lateris quæsitæ: quod erit quadrante minus, si datus angulus fuerit acutus; maius vero, si obtusus.

In triangulo rect. ABC datum sit latus AB 42 gr. 24'. cum angulo

TRIANGULA

adiacente A grad. 40. Oportet ex his latus BC inuenire. Per reg. trium dicemus si sinus tot. 100000 dat 67430 sin. lat. AB , quid dabit tangens ang. A 83910? reperiemusque 56581 pro tangente lateris quaesiti BC ; quod erit 29 gr. 30', 6".

Alt. analogia. Ut sinus totus ad secantem compl. lateris dati, ita tangens compl. anguli noti ad tangentem compl. lateris quaesiti.

12. Dato alterutro laterum cum angulo ei adiacente, inquirere hypotensam.

Fiat, ut sinus totus ad sinum compl. anguli dati, ita tangens compl. lateris noti ad aliud; produceturque tangens compl. hypot. quæ erit minor quadrante, si datus ang. fuerit acutus, & datum latus quadrante minus

SPHÆRICA.

aut si ang. datus obtusus fuerit,
& latus datum maius quadrante.
Maior autem quadrante erit
eadem hypot. si datus angulus
fuerit acutus, & latus datum
maius quadrante; aut si datus
angulus fuerit obtusus, & latus
datum quadrante minus.

*Esto triangulum rect. ABC, in
quo datum sit latus AB grad. 42.*

24', cum ang.

adjac. A grad.

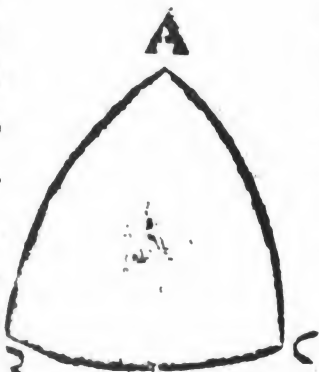
*40. Oportet ex
his hypotenu-
sam inuenire.*

*Dic per reg.
auream, si sin.*

tot. 100000

dat 76604 }

sin. compl. ang.



A, quid dabit tangens compl. lat.

AB 109514' ? produceturque

83892. tang. compl. hypotenusa qua-

sita AC, ac proinde hac hypot. erit

TRIANGVLA

50 grad. 22'.

Alt. analogia. Vt tangens lateris
dati ad sinum anguli noti, ita si-
nus totus ad tangentem compl.
hypot.

13. *Datis duobus angulis obliquis;
inuenire latera illis opposita.*

Fiât, vt sinus anguli dati quæ-
sito lateri adiacentis ad sinum
totum, ita sinus complem. alte-
rius anguli dati ad aliud; repe-
rieturque sinus complementi
lateris huic posteriori angulo
oppositi. Erit autem latus inuē-
tum quadrante minus, si datus
angulus ei oppositus fuerit acu-
tus; maior vero, si obtusus.

*In triangulo rect. ABC noti sint
anguli obliqui A & C; nempe A
39.gr.59', & C 61 gr. 40'. & oportet
ex his latera opposita inuenire.
Dicemus per regulam auream, si*

fin.

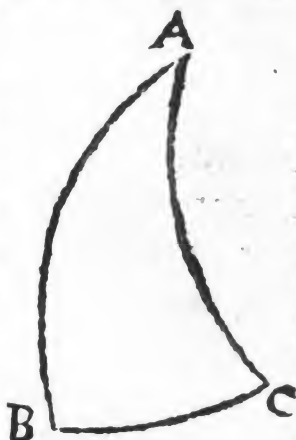
SPHÆRICA.

sin. ang. A 64256 dat sin. tot. 100000, quid dabit sin. cōpl.

ang. C 47460? reperiemusque 73861 pro sinu compl. lateris AB , quod erit 42 gr. 23'. 13".

Dicemus rursus, si sin. ang.

C 88020 dat sin. tot. 100000, quid dabit sin. compl. ang. A 76623? inueniemusque 87052 pro sinu compl. lateris BC ; quod idcirco erit 29 gr. 28'. 52".



Alt. analogia. Ut sinus totus ad sinum unius ang. obl. ita secans alterius ang. obl. ad secantem lateris huic posteriori angulo oppositi.

14. *Datis duobus angulis obliquis, reperire hypotensam.*

R

TRIANGVLA

Fiat, vt sinus totus ad tangen-
tem compl. vtriusvis angulo-
rum dat. ita tangens compl.
alterius dati anguli ad aliud,
produceturque sinus compl.
hypot. quæ erit quadrante mi-
nor, si vterque angulorum da-
tor. acutus fuerit, obtususve;
quadrante vero maior, si alteru-
ter angulorum acutus fuerit &
alter obtusus.

*Estot triangulum rect. ABC in quo
dati sint anguli obliqui A & C,
nempe A gr. 54, & C 42 gr. 44'. &
oportet ex his inuenire hypotenu-
sam AC. Per reg. aur. dicemus, si sin.
tot. 100000 dat tang. comp. ang.
A 72654, quid dabit tang. compl.
ang. C 108243? reperiemusque
78643 pro sinu compl. hypot. AC,
quæ idcirco erit 38 gr. 8'. 50".*

*Alt. analogia. Vt sinus totus ad
tangente[m] vnius anguli dati,
ita tangens alterius anguli da-*

SPHÆRICA.

ti ad secantem hypot.

15. *Datis duobus lateribus circa
angulum rectum, inuenire hy-
potenusam.*

Fiat, ut sinus totus ad sinum
compl. vtriuslibet laterum da-
torum, ita sinus compl. alterius
lat. dati ad aliud, gigneturque
sinus compl. hypot. quæ erit
quadrante minor, si vtrumque
latus datum fuerit minus, aut
maius quadrante: quadrante
vero maior, si alterutrum da-
torum laterum fuerit minus
quadrante, & alterum maius.

*Esto triangulum rect. ABC, in
quo sint data duo latera AB gr. 42
24'. Et BC gr. 29, 29'. ex qui-
bus opus sit cognoscere hypotenu-
sam AC. Per regulam trium dice-
mus, si sinus totus 100000 dat
73846 sin. compl. lat. AB, quid
dabit sin. compl. lat. BC 87050?*

R ij

TRIANGVLA

reperiemusque 64283 pro sinu
compl. hypot. quasi: a AC, qua id-
circo erit 49 gr. 59'. 52".

Alt. analogia. Vt sinus totus ad
secantem vtriuslibet lat. noto-
rum, ita secans alterius lateris
ad secantem hypotenusæ.

16. *Datis duobus lateribus circa
angulum rectum, angulos obli-
quos inquirere.*

Fiat, vt sinus totus ad sinum
vniū lat. ita tangens compl.
alterius lat. ad aliud; prodibitq;
tangens compl. anguli huic
posteriori lat. oppositi: qui
angulus acutus erit, si datum
latus oppositum fuerit minus
quadrante; obtusus autem, si
maius.

*In triangulo rect. ABC sint data
latera duo AB, BC, nimirum AB
42 gr. 24'. Et BC 29 gr. 30. Et*

SPHÆRICA.

oporteat ex his inuenire angulos obliq. $A \text{ \& } C$. Per reg. trium dicemus, si sinus tot. 100000 dat 67430 sin. lat. AB , quid dabit tang. compl. lat. BC 176749? inueniemusque 119182 pro tang. compl. anguli A , qui idcirco erit 39. gr. 59'. 54''. Et dicendo rursus, si sin. tot. 100000 dat 49242 sin. BC , quid dabit tang. compl. AB 109514? producet 53027 pro tang. compl. ang. C , qui idcirco erit 61 gr. 39'. 49''.

Alt. analogia. Vt sinus vtriusque laterum datorum ad sinum totum, ita tangens alterius lat. lati ad tangentem anguli huic posteriori lateri oppositi.

Haftenus de triangulis sphaericis reſt angulis, ſupereſt ergo

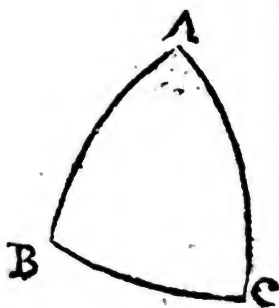
Calculus triangulorum ſphaericorum obliquangulorum.

TRIANGULA

17. *Datis tribus angulis trianguli sphaerici obliquanguli, latus quodlibet inuestigare.*

In triangulo oblato aut omnes tres anguli sunt æquales, aut duo tantum, aut omnes tres inequales. Sit primum triangulum ABC , in quo sint omnes tres anguli, vel duo B , C , duntaxat æquales, eruntque idcirco & latera AB , AC eis opposita æ-

qualia, angulique B , C , vel acuti, vel obtusi. Si igitur ex tertio angulo A ,



in latus oppositum BC , arcus perpendicularis intelligatur demissus AD , cadet is intra

S P H Æ R I C A.

triangulū, diuidetq; tam latus BC, quam angulum BAC bifariam: ac proinde cum totus angulus ad A datus sit, dabuntur etiam eius semisses BAD, CAD. Quamobrem in triangulo rectang. ABD, duo anguli obl. B & BAD noti sunt, ac proinde dabitur per probl. 15. hypotenusam AB, ideoque etiam notum erit latus AC, ipsi AB æquale: Immo & tertium latus BC, si omnes tres anguli illius trianguli ABC, dati sunt æquales, datum erit. Si vero solum duo anguli B & C, æquales sunt, reperietur latus BD, per probl. 13. quo duplicato, notum fiet totum latus BC.

Si vero omnes tres anguli inæquales sint, vnumquodque latus reperietur alternatim, vt sequitur.

Fiat, vt sinus totus ad sinum cu-

R iiij

TRIANGULA

cuiuslibet angulorum quasito lateri
adiacent. ita sinus alterius anguli
adiac. ad quartum alium nume-
rum. Deinde fiat, ut quartus nu-
merus inuentus ad sinum totum, ita
differentia inter sinum versus an-
guli quasito lateri oppositi, & si-
num versus differentia alterius-
trius angulorum adiacentium, &
alterius adiac. ad semicirculum
complementi ad aliud: produce-
turque sinus versus lateris quasiti.

In triangulo præced. omnes
tres anguli inæquales dati sint,
nempè A 86 gr. 48', B 68 gr.
19', & C 40 gr. Oporteat au-
tem ex his inuestigare latus
AB. Per regulam auream dic, si
sin. tot. 100000 dat 99844 sin.
anguli A, quid dabit sinus ang.
B 92924? reperieturque quar-
tus numerus proport. 92779:
Postea subtrahe ang. B ex gra-
du 180, & restabunt 111 gr. 41'.

SPHÆRICA.

pro compl. illius ang. B ad semircirculum, cuius cōplemēti subtrahere angulum A, & restabunt 24 gr. 3' pro differentia eorum, cuius accipe sinum versum, ac etiam sinum versum anguli C lateri quæsito oppositi: illi sinus erunt 9283 & 23396: subtrahere minorem eorum ex maiori, vt habeas differentiam illorum sinuū, nempe 14113; hanc diff. multiplica per sinum totum, & proueniet 1411300000, quem diuides per quart. num. supra inuentum 92779, & quotiens 15211 erit sinus versus lateris quæsiti AB, quod idcirco erit 32 gr. 1'.

Alt. analogia. Vt sinus totus ad secantem compl. vnius anguli quæsito lateri adiacētis, ita secans compl. alterius anguli dicto lateri adiacentis ad quartum numerum: Deinde, vt sinus totus ad illum nu-

TRIANGVLA

merum inuentum, ita differentia inter sinū versum, vel sinum compl. anguli quasito lateri oppositi, & sinum versum, vel sinum compl. differentia unius anguli adiacentis, & reliqui anguli adiacentis ad semicirculum complementi ad sinum versum lateris quasiti.

Quod si duo, vel omnia tria latera trianguli quærerentur, illa reperirentur eodem modo quo supra, aut reperto vno ex illis lateribus solum, reliqua duo latera possent facile reperire iuxta hanc analogiam: *ut sinus anguli lateri noto oppositi ad sinum huius lateris, ita sinus anguli lateri quasito oppositi ad sinum ipsius lateris quasiti. Quia in omni triangulo sphaerico sinus laterum sinibus oppositorū angulorum directe sunt proportionales. Sic latus AC reperietur circiter 50 gr. 2'. 3". & latus BC 55 gr. 25'. 18".*

SPHÆRICA.

18. *Datis tribus lateribus trianguli
sphærici obliquanguli, quemlibet
angulorum indagare.*

Duo latera ambientia quæ-
situm angulum sunt aut æqua-
lia, aut inæqualia. Notis in pre-
cedente triangulo lateribus,
investigandus est angulus BAC ,
sintque primum duo latera
 AB, AC , eum ambientia, æqua-
lia. Demissus ex angulo quæsito
arcus perpendicularis AD , secā-
bit & angulum quæsitum & la-
tus oppositum BC , bifariam. Et
quia in triangulo rectangulo
 BAD , hypotenusa AB nota est,
cum latere BD , (est enim semis-
sis lateris BC noti) quod angu-
lo BAD opponitur, cognosce-
tur angulus BAD ex prob. 4. ac
proinde & totus angulus quæ-
situs BAC , cum illius duplus sit,

TRIANGULA

cognitus erit.

Sint iam duo latera quæsitum
angulum ambientia, inæqualia:
hic angulus inuenietur hoc mo-
do.

*Fiat, ut sinus totus ad sinum
utriuslibet duorum laterum qua-
situm angulum comprehenden-
tium, ita sinus alterius lateris ad
quartum; Deinde rursus fiat, ut
numerus quartus inuentus ad si-
num totum, ita differentia inter si-
num lateris quasito angulo opposi-
ti, & sinum versum arcus, quo duo
latera angulum quasitum ambien-
tia inter se differunt, ad aliud; pro-
duceturque sinus versus anguli
quasiti.*

In triangulo præced. omnia
tria latera sint data inæqualia,
nempe AB 54 grad. 30'. AC 42
gr. 55', & BC grad. 25. Oportet
ex his inuenire angulum A . Per
regulam trium dicemus, si sinus

SPHÆRICA.

totus 100000 dat 81412 sin. lat. AB, quid dabit sin. lat. AC 68903? inueniemusque quartum numerum 55439. Nunc auferimus minus duorum laterum angulum quæsitum A comprehendendum ex maiore, & restabunt 11 gra. 35' pro differentia eorum laterum, cuius diff. sinus versus est 2037, & sinus versus lateris BC angulo quæsito oppositum est 9369, ac proinde differentia eorum sinuū est 7332. Dicemus igitur, si quartus numerus inuentus 55439 dat. sin. tot. 100000, quid dabit diff. 7332? reperiemusque 13225 pro sinu verso anguli quæsitum A, qui idcirco erit 29 gr. 48'. 8'.

Si vero vnusquisque reliquorum angulorum B & C etiam quæreretur, reperiretur eodem modo, aut potius iuxta analogiam & proportionem quam

TRIANGULA

nus laterum habent ad sinus
ngulorum oppositorum, si ap-
pareat angulum quæsitum esse
cutum aut obtusum : nam sine
ac præcautione angulus ille
on potest absolute determina-
i per illam analogiam , cum
dem sinus rectus respondeat
ngulo acuto , ac etiam obtuso ;
quod non accidit sinui verso : &
dcirco si non appareat de spe-
cie vniuscuiusque duorum re-
iquorum angulorum , venien-
dum erit ad perquisitionem il-
orum per modum supradictû,
vel secundum alteram hanc
analogiam.

Alt. analogia. Vt sinus totus ad
secantem compl. vnius lateris
ambientis, ita secans compl. al-
terius lateris ambiētis ad quar-
tum numerum : deinde , vt sinus
totus ad quart. numerum inue-
tum , ita differentia inter sinum

SPHÆRICA.

versum lateris angulo quæsito oppositi, & sinum versum differentiae duorum laterum ambientium ad sinum versum anguli quæsiti.

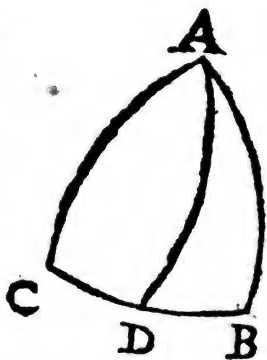
19. Datis in triangulo sphaerico obliq. duobus lateribus, cum angulo ab ipsis comprehenso, reliquum latus cum reliquis duobus angulis, inquirere.

Latera data erunt aut æqualia, aut inæqualia. Sit igitur primo triangulum ABC habens duo latera AB, AC , æqualia nota, & angulus A ab illis comprehensus etiam notus. Anguli B & C æquales erunt; si ergo demissus ex angulo dato BAC arcus perpendicularis AD , secabit & datum angulum, & quæsitum latus BC , bifariam. Et quia in triangulo rectangulo

TRIANGVLA

BAD , hypotenusæ AB cum angulo BAD , qui quæsitò lateri BD opponitur, data est, dabitur quoque ex probl.

i. latus BD , ac proinde & totum latus BC ,



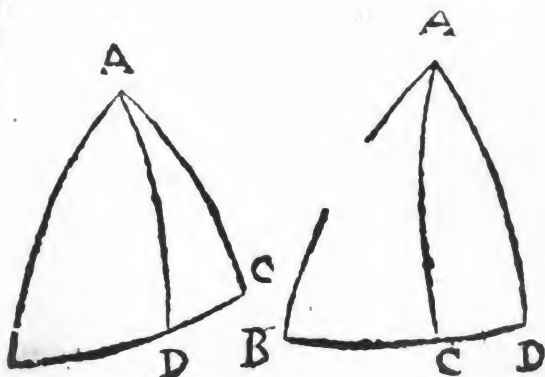
datū erit. Rursus ex data hypot. AB , & angulo BAD , reliquus angulus ABD ex probl. 3. notus fiet; Ideoque angulus C ei æqualis erit etiam notus.

Sint iam latera data AB , BC . inæqualia, quorum neutrum quadrans. Ex A termino vnius eorum laterum demittatur ad alterum, protractum si opus sit, arcus perpendicularis AD , qui quando intra triangulum, & quando extra cadat, operatio ipsa docebit. Nam in triangulo

rectan-

SPHÆRICA.

rectangulo ABD, cum hypotenusa AB data sit, cum angulo



B, inuenietur per prob. 1. latus AD angulo B oppositum : & per prob. 2. alterum latus BD; quod si latus hoc, inuentum fuerit minus dato latere BC, cadet arcus AD, intra triangulum; si vero maius, extra. Detrahto ergo latere BD ex dato latere BC, vel hoc ex illo, datum quoque erit latus CD: Ideoque per probl. 15. hypotenusa AC trianguli rect. ADC reperietur:

TRIANGULA

& per 16. prob. dabuntur anguli CAD , & ACD : hic autem angulus ACD in priori triangulo est quæsitus, in posteriori vero reliquus duorum rector. ACB , est is, qui quæritur. Ad extremum per idem probl. 16. eliciatur angulus BAD ; qui in priori triangulo additus inuento angulo CAD , vel in posteriori ab eodem demptus, notum faciet angulum quæsitum BAC .

Quod si forte latus CD deprehendatur quadrans, erit tunc & latus quæsitum AC quadrans, & angulus CAD rectus : atque ita sine molestia inuentum erit latus AC , quod quæritur, & angulus CAD : ex quibus quæsitos angulos BAC , ACB inueniemus, vt prius.

Sit iam alterutrum datorum laterum inæqualium quadrans,

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nempe AB, à cuius extremo A, ad alterum arcus perpendicularis AD demittatur. Erit tunc latus quoque BD quadrans : & angulus BAD rectus : nec non B polus arcus AD ; ac proinde hic arcus AD , ex dato angulo B notus fiet. Atque ita in hoc casu duo latera BD , AD , cum angulo BAD, nota facta erunt, sine alio labore: ex quibus reliqua inuestigabuntur, vt prius.

Aliter. Fiat , vt sinus totus ad sinum utriuslibet datorum laterum inaequalium, ita sinus alterius lateris dati ad quartum numerum: Deinde rursus fiat, vt sinus totus ad inuentum illum quart. numerum , ita sinus versus anguli dati ad aliud; reperieturque differentia inter sinum versus tertij lateris quasiti , & sinum versus arcus quo duo latera data inter se differunt: qua differentia inuenta ad sinum versus illius

TRIANGULA

arcus, quo duo latera data inter se differunt, adiecta, conficit sinum versum tertij lateris quasiti, ex quo ipsum latus tertium cognoscetur. Atque ita cognita iam erunt omnia tria latera trianguli propositi; ac proinde uterque reliquorum angulorum notus fiet, ut in antecedente probl. traditum est.

Esto triangulum ABC habens latus AB gr. 54, 30', latus BC gr. 25, & angulus B ab eis comprehensus 53 gr. 12', 13''. Oportet ex his reliquum latus AC, & reliquos angulos BAC, BCA, cognoscere. Per reg. auream dicemus, si sin. tot. 100000 dat 81412 sin. lat. AB, quid dabit sin. lat. BC, 42262? inueniemusque 34406: Deinde rursus dicemus, si sinus tot. 100000 dat 34406, quid dabit sin. vers. anguli dati B 40103? reperiemusque 13798 pro dif-

SPHÆRICA.

ferentia inter sin. vers. lat. A C, & sinum vers. different. iæ datorum laterum A B, B C, qui est 12964: addamus igitur huic sinu verso 12964, different. inuentam 13798, & venient 26762 pro sinu verso lateris quæsitæ A C, qui idcirco erit 42 gr. 54'. 48".

Iam cum tria latera trianguli A B C cognita sint, & etiam angulus B, vterque reliquorum angulorum A & C reperiatur, vt in præced. probl. dictum est.

20. *Datis in triangulo sphærico obliq. duobus angulis, cum latere illis adiacente, reliqua duo latera, cum reliquo angulo reperire.*

Erunt anguli noti aut æquales, aut inæquales: Primū igitur

TRIANGVLA

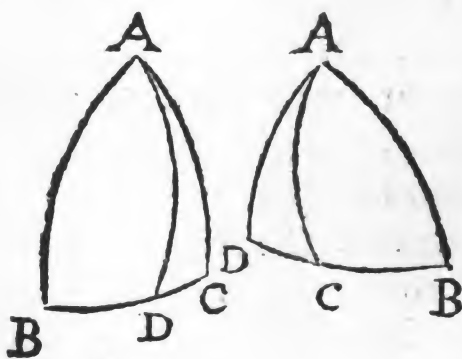
in triangulo ABC sint dati duo anguli B & C æquales, cum latere BC; eruntque propterea latera AB, AC, æqualia. Demissus ergo ex tertio angulo A arcus perpendicularis AD; dividet tam latus BC, quam angulum A, bifariam: ac propterea cum in triangulo rectangulo ABD, latus BD datum sit cum angulo B, reperietur per prob. 7. hypotenusa AB, ideoque & AC latus notum erit; at per probl. 10. inuenietur angulus BAD, semissis totius BAC.



Sint iam dati duo anguli B, BAC inæquales, cum latere AB, quod non sit quadrans. Ex alterutro notorum angulorum, vt

S P H Æ R I C A .

ex A, demittatur ad latus oppositum BC, protractum etiam si opus sit, arcus perpendicularis AD, qui quando intra triangulum, & quando extra cadat, operatio ipsa docebit. Nam in triangulo rect. ABD



cum hypot. AB data sit cum angulo B; inuenietur per probl. 1. latus AD, & per probl. 3. alter angulus obliq. BAD, qui si minor repertus fuerit angulo BAC, cadet arcus AD intra triangulum; si vero maior, ex-

TRIANGULA

tra. Detracto ergo angulo BAD ex dato angulo BAC , vel hoc ex illo, datus quoque erit angulus CAD reliquus.

Iam cum in triangulo rect. ABD hypot. AB data sit, & angulus B , dabitur quoque per probl. 2. latus BD , dato angulo B adiacens. Rursus in triangulo rect. CAD , cum inuentum sit latus AD , & angulus CAD ; dabitur per probl. 11. etiam latus CD . Igitur cadente arcu AD intra triangulum, summa laterum BD, CD , totum latus BC notum efficiet: cadente vero extra, latus CD ex BD subtractum reliquum faciet latus BC notum. Atque ita inuentum iam est alterum reliquorum laterum BC .

Postremo quia in triangulo rect. CAD datum est latus AD cum angulo obliq. adiacente

SPHÆRICA.

CAD; dabitur per probl. 12. hypotenusæ AC, quæ est tertium latus: at per probl. 10. reperietur angulus C dato lateri AD oppositus, qui in priori casu est tertius, qui quæritur, in posteriori autem complementum eius ad semicirculum dabit tertium quæsitum.

Quod si quando angulus CAD inuentus fuerit rectus, (angulus BAD nunquam erit rectus) quoniam & D rectus est, erunt CA, CD quadrantes, & latus AD inuentum erit arcus anguli quæsitæ C: latus denique inuentum BD, cum quadrante CD, in priore casu efficiet totum latus CB notum: in posteriore autem casu quadrans CD, ex inuento latere BD subductus relinquet quæsitum latus BC.

Tertio, sint iidem dati anguli.

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B, BAC inæquales, & latus AB quadrans recto angulo D oppositum: erit igitur saltem alterum reliquorum laterum etiam quadrans. Cum ergo AD non possit esse quadrans, erit BD quadrans, ideoque angulus BAD rectus, propter quadrantes BA, BD: Et B polus erit arcus AD, hoc est, AD arcus erit dati anguli B, atque idcirco notus. Quibus inuentis reperietur reliqua, ut prius, nimirum CD per 11. probl. & AC per 12. & angulus C per 10. ex dato latere AD & angulo CAD.

Aliter. Fiat, ut sinus totus ad sinum utriuslibet datorum angulorum inæqualium, ita sinus alterius anguli dati ad quartum numerum: Deinde rursus fiat, ut sinus totus ad quart. numer. inuentum, ita sinus versus lateris dati ad aliud; reperieturque sinus ver-

SPHÆRICA.

is anguli quæsiti, minus sinus ver-
 i differentia unius anguli à com-
 lemento alterius ad semicircu-
 um; ita ut sinus versus inuentus
 additus sinus verso dicta differen-
 tia, conficiat sinum versum tertij
 anguli quæsiti. Atque ita cogniti
 erunt omnes tres anguli pro-
 positi, ac proinde utrumque reli-
 quorum laterum notum fiet, ut in
 robl. 17. traditum est.

In triangulo sphærico ABC
 lati sint duo anguli B 53 gr.
 3'. & C 106 gr. 46'. cum latere
 diacente BC 25 gr. Oportet
 ex his reliqua duo latera AB,
 AC, cum reliquo angulo A re-
 perire. Dicemus igitur per reg.
 rium, si sin. tot. 100000 dat
 80091 sin. ang. B, quid dabit
 in. ang. C 95749? reperiemus-
 que 76686: Postea dicemus
 rursus, si sin. tot. 100000 dat
 76686, quid dabit sin. vers. late-

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ri dati 9369 ? inueniemusque 7185 pro differentia inter sin. vers. ang. quæsti A, & sin. vers. differentia ang. B à compl. ang. C ad semicirculum, qui est 6044 : huic sinui verso addamus igitur dictam diff. inuentam 7185, & venient 13229 pro sinu verso dicti anguli quæsti A, qui idcirco erit 29 grad. 48', 24''.

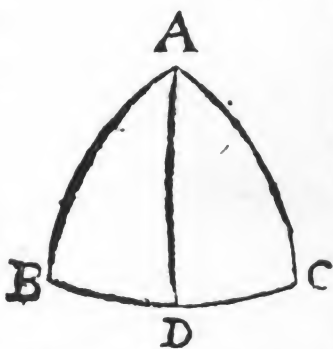
Iam innotescunt omnes tres anguli trianguli ABC, cum latere BC; ac idcirco reliqua duo latera AB, AC noscentur, vt in prob. 17 traditum est.

21. *Datis duobus angulis trianguli sphaerici obliq. cum latere alteri illorum opposito, reliqua latera, cum reliquo angulo indagare: si modo constet species alterius lateris alteri dato angulo oppositi.*

S P H Æ R I C A.

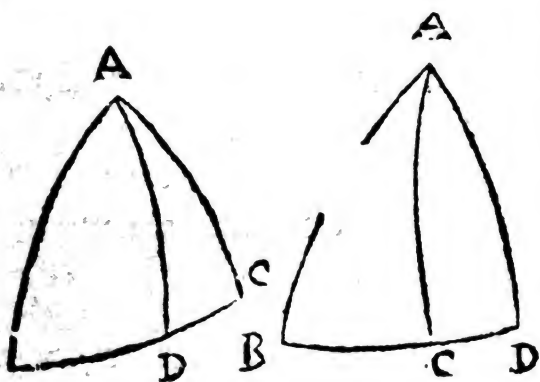
In triangulo ABC dati sint primū duo anguli B, C , æquales, cum latere AB . Erunt igitur latera AB, AC æqualia; deoque cum AB datum sit, erit quoque AC datum. Solum ergo inquirendum erit latus BC , cum angulo BAC . Si autem ex angulo A in latus oppositum BC , arcus perpendicularis intelligatur demissus.

AD , cadet is intra triāgulum, secabitque tam latus BC , quam angulum BAC bifariam: ac propterea cum in triangulo rect. ABD , detur hypoten. AB cū angulo B , dabitur per prob. 2. latus BD , ideoque & eius duplum BC , quod quæritur,



T R I A N G V L A

datum erit: & per probl. 3. dabitur angulus BAD , ideoque & eius duplus BAC quæsitus.



Sint iam dati duo anguli B , C , inæquales, cum latere AB non quadrante, & specie lateris AD . Ex tertio angulo A , demittatur ad latus BC arcus perpendicularis AD , qui intra triangulum cadet, si uterque angulorum B , C , datorum acutus est, aut obtusus; extra vero, si vnus acutus est, & obtusus alter. Cum ergo in

SPHÆRICA.

triangulo rectang. ABD data sit hypotenusæ AB, cum angulo B; dabitur per prob. 1. latus AD; & per prob. 2. latus BD; & per probl. 3. angulus BAD.

Rursus, quia in triangulo rectangulo ACD datum est latus AD cum angulo C opposito, & specie hypot. AC; dabitur per prob. 7. hæc hypot. AC; & per prob. 8. angulus CAD; qui adiectus ad inuentum angulum BAD, cadente arcu AD intra triangulum, vel subductus ex eodem angulo BAD, cadente arcu AD extra triangulum, notum dabit angulum quæsitum BAC. Iam per prob. 1. vel 9. dabitur latus CD, quod in priori triangulo additum inuento lateri BD, vel in posteriori ab eo ablatum, notum faciet latus BC quæsitum.

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Quod si quando accidat, latus AC esse quadrantem, erit quoque CD quadrans, & angulus CAD rectus, &c.

Denique, sit datum latus AB quadrans, & adhuc dati duo anguli B, C, inæquales. Erit igitur & BD quadrans, & angulus BAD rectus; & AD arcus dati anguli B, proindeque notus, &c.

Sed hic observandum est solum quæsitohatere AC, non futurum necesse reducere triangulum datū ABC in duo triag. rectangula per arcum AD: Nā dictum latus AC facile reperiretur per angulum B ei oppositum.

22. *Datis in triangulo sphaerico obliquangulo duobus lateribus, cum angulo alteri eorum opposito, reliquos angulos cum reliquo*

latere

SPHÆRICA.

*latere inuenire : si modo constet
species alterius anguli alteri la-
teri oppositi.*

In triangulo ABC data sint
primum duo latera AB, AC, æ-
qualia, cum

angulo B :

Erunt ergo

anguli B, C

æquales, ac

propterea

cum B datus

fit, dabitur

& angulus C. Solum ergo in-

quirendum erit latus BC, cum

angulo BAC. Demitatur ex ter-

tio angulo A arcus perpendi-

cularis AD, qui intra triangu-

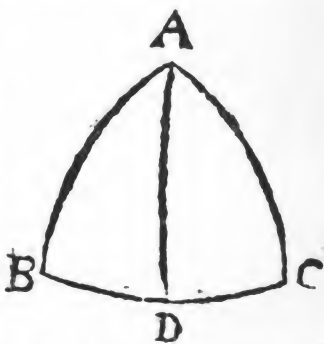
lū cadet, diuidetq; & latus BC,

& angulū BAC bisariam. In triā-

gulo autē rectāgulo ABD, cū da-

ta sit hypot. AB, cum angulo B,

dabitur per probl. 2. latus BD,

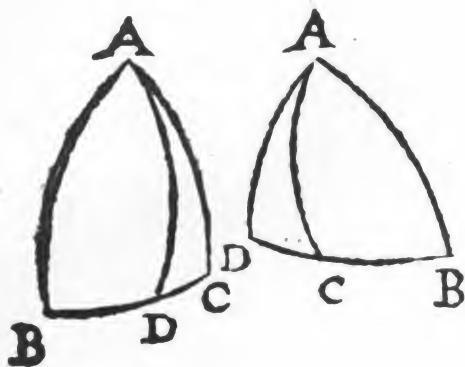


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TRIANGULA

ideoque & eius duplū BC quæ-
situm: Et per prob. 3. inuenie-
tur angulus BAD , atque idcirco
eius duplus BAC quæsitus notus
erit.

Sint iam data duo latera AB ,
 AC inæqualia, quorum neutrum
quadrans, cum angulo B , & spe-
cie alterius anguli C . Ducatur
ex tertio angulo A ad latus BC



arcus perpendicularis AD , qui
intra triangulum cadet, si uter-
que angulus B , C , est acutus, vel
obtusus, extra vero; si vnus est

S P H Æ R I C A.

acutus & alter obtusus. Et quoniam in rectang. triag. ABD , datur hypotenusæ AB , cum angulo B , dabitur per probl. 1. latus AD angulo dato oppositum; & ex prob. 2. latus BD : & per prob. 3. angulus BAD .

Rursus, quia in triangulo rectangulo CAD , data est hypot. AC , cum latere AD inuento; dabitur per probl. 6. latus CD ; & per prob. 5. angulus DAC ; & per prob. 4. angulus C . Si igitur arcus AD intra triangulum existit, dabunt ambo anguli BAD , CAD , inuenti totum angulum BAC quæsitum: & ambo latera BD , CD , inuenta totum latus BC quæsitum. Si vero arcus AD cadit extra triangulum, angulus CAD ex angulo BAD subtractus notum relinquet angulum quæsitum BAC ; & latus CD ex latere BD ablatum

TRIANGULA

relinquet quæsitum latus BC.

Deinde, sit alterum datorum laterum quadrans. Si igitur AB quadrans est, erit & BD quadrans : & angulus BAD rectus : & AD arcus anguli dati B, ideoque notus, &c.

Si vero AC quadrans est, erit & CD quadrans : & angulus CAD rectus : & AD arcus anguli C, ac proinde inuentus arcus AD notum exhibebit angulum C, &c.

Quod si angulus C solum quæteretur, non futurum necesse reducere triangulum propositum ABC in duo rectangula triang. per arcum AD: Nam dictus angulus C facile reperiretur per latus AB ei oppositum.

Omniū autem analogiarum, regularum & operationū quæ in praxim reducuntur in trigonometria hæc mea quidem

PROSTHAPHÆR.

opinione sunt facilimæ obseruatu, & idcirco finem nunc faceremus, nisi quorundam ex amicis precibus in animum induxissemus ijs quæ supra docuimus addere praxim calculi triangulorum, tam rectilineorum, quam sphericorum per solam Prosthaphæresin, id est, per solam additionem, subtractionemque, sine laboriosa numerorum multiplicatione & diuisione.

PRAXIS PROSTHAPHÆRESEOS.

In omni supputatione trigonometrica semper aliqua analogia quatuor terminorum consideratur, ex quibus tres noti sunt. Et quartus solet quæri per regulam auream, sed ad inueniendum eum per prosthaphæresin notandum est, sinum co-

EXEMPLA

rum poni in primo loco dicta regula, vel in secundo & tertio, vel nusquam : quamobrem praxis huius doctrinae prosthaphæretica ad tres regulas generales reducitur.

PRIMA REGULA PROSTHAPHÆRESEOS.

Quotiescunque est, ut sinus totus ad sinum alicuius arcus, vel anguli, ita sinus alterius cuiuspiam arcus, vel anguli ad aliud, addatur simul duo illi arcus vel anguli, & huius aggregati sumatur sinus complementi: Deinde subtrahatur minor numerus duorum illorum ex maiore, ut habeatur differentia eorum, cuius differentia sumatur sinus complementi, à quo auferatur sinus complementi dicti aggregati, si aggregatum ipsum fuerit quadrante minus,

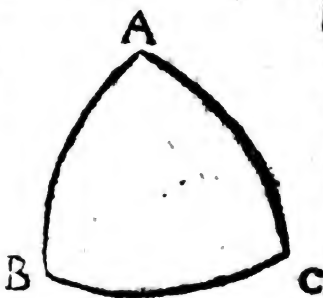
PROSTHAPHÆR.

vel ambo sinus compl. simul addantur, si idem aggregatum exceſſerit quadrantem, & ſemiſſis numeri qui prodibit ex tali additione vel ſubtractione, aut ſemiſſis ſinus complementi dictæ differentię, ſi aggregatum ſupradictum quadrantem fuerit æquale, erit quartus terminus quæſitus.

Primum exemplum.

In triangulo ſpharico rectangulo ABC, data hypotenuſa AC gr. 53, cum angulo C gr. 32, inuenietur latus AB dicto angulo oppoſitum gr. 25. 2', 18''.

Nā iuxta primā analogiā probl. 1. triangulorum ſpharic. ut ſinus totus ad 79864 ſinus hypot.



EXEMPLA

AC, ita 52992 sinus ang. *C* ad
42322 sinus lat. *AB*: hunc autem
sinum per prosthapharesin inue-
niamus ut sequitur.

Hypot. *AC* gr. 53.

Angul. *C* gr. 32.

Differentia gr. 21. sin. cōpl. 93359

Aggregatū gr. 85. sin. cōpl. 8716

Relictum ē subtractione 84643

Eius dimidiū, nēpe sin. quasi: 42322

Exemplum secundum.

Esto nunc hypot. *AC* gr. 62. 12', &
angulus *C* gr. 48. 30'. Ex his inue-
nietur latus *AB* gr. 41. 30' 30". hoc
modo.

Hypot. *AC* g. 62. 12'.

Angul. *C* g. 48. 30'.

Aggregatum 110. 42. sin. cōpl. 35347

Differentia 13. 42. sin. cōpl. 97155

Aggregatum ē sinibus 132502

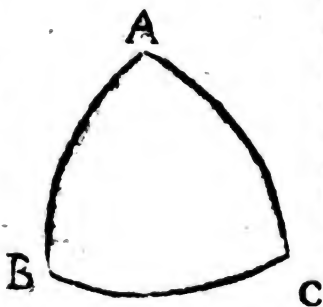
Eius dimidiū, nēpe sin. lat. *AB* 66251

PROSTHAPHÆR.

Exemplum tertium.

In triangulo spherico rectangulo ABC, detur latus BC gr 29.29', cum angulo obl. C gr. 61. 40'. Et ex his quaratur reliquus angulus obl.

A. Iuxta analogiam primā probl. 10. ut si-
nus totus ad
sinum anguli
dati C, ita si-
nus comple-
menti lateris



BC ad sinum compl. anguli quasi sit
A; Et idcirco hic angulus A inue-
nietur gr. 39.59'. 6'. ut apparet in
prosthaphær. sequente.

Angulus C gr. 61. 40'
Cōpl. lat. BC gr. 60. 31.

Aggregatum	122 11.	sin. cōpl.	53263
Differentia	1.	2. sin. cōpl.	99980
Aggregatum ē sinibus			153243
Dimidiū, nēpe sin. cōpl. ang. A			76621

EXEMPLA

Cum vero sinus totus primū analogiæ aut regulæ proportionum locum obtinet, & duo numeri sequentes, vel alteruter eorum, non est sinus, sed tangens, vel secans, vel alius quilibet numerus, accipiendus est in canone sinuum arcus illi numero respondens, tanquam sinui recto, ita tamen ut cum dictus numerus sinu toto maior est, abijciantur à parte dextra tot figuræ, quot satis sunt, ut reliquus numerus minor fiat sinu toto: & ad inuentum quartum numerum per prosthaphæresin siue is sinus sit, siue tangens, siue secans, siue aliquis alius numerus, adijciantur ad partem dextram tot ziphæ, quot figuræ abiectæ fuerunt. Porro quum dictus numerus propositus nimis parvus est, addatur ad partem dex-

PROSTHAPHÆR.

trā o, vel oo, vel ooo, vel oooo,
ita tamen ut numerus qui fiet
non maior sit sinu toto : & ex
inuento quarto numero per
prosthaphæresin , abijciantur
tot figuræ, quot ziphræ adiectæ
fuerunt. Sed rem hanc totam
nonnullis exemplis planiorem
faciamus.

Exemplum primum.

In triangulo sphær. rect. ABC,

dentur latus AB

gr. 48. 24'. Et

angulus A gr. 40

Et ex his qua-

ratur latus BC.

Iuxta 1. analo-

giam probl. 11.

triangulorū spha-

ric. ut sinus to-

tus ad sinū la-

teris dati AB, ita 83910 tangens an-



E X E M P L A

gulo notis A ad tangentem lateris
quasiti BC. Cum autem tertius
numerus huius analogia est tangēs
quaremus in canone sinuum arcum
illi tangenti 83910 tanquam sinus
recto congruentem; inueniemusque
circiter gr. 57. 2'. 40''. qua pone-
mus in prosthaphar. loco gr. 40 pro-
positorum, ut hic vides.

Arc. gr. 57. 2'. 40'' inuent.

Lat. gr. 42. 24. AB dat.

Aggregat. 99. 26. 40 sin. 10p. 16410

Differētia 14. 38. 40 sin. 10p. 96751

Aggregatum ē sinibus 113161

Semissis, quæ est tang. lat. BC 56580

Ideoq; hoc latus quasitū BC, erit gr. 29.
0'. 6''.

Exemplum secundum.

In eodem triangulo ABC, de-
tur hypot. AC gr. 50, cum angu-
lo C gr. 40. Ex his quaratur la-
tus adiacens AB. Secundum autem
analogiam primam probl. 2. trian-

PROSTHAPHÆR.

gularum spheric. ut sinus totus ad
sinum compl. anguli noti C, ita tan-
gens hypot. AC ad tangentem late-
ris quasi AB. Quoniam vero ter-
tius numerus huius analogia est
tangens hypot. AC, nempe 119175;
accipiendus est in canone sinuum ar-
cus illi tangenti respondens abiecta
ultima figura 5, quia hac tangens
sinu toto maior est; inuenienturque
circiter gr. 6. 50'. 40". pro arcu reli-
cto numero 11917 congruente. Sic
ergo stabit exemplum.

Compl. gr. 50. anguli C.
Arcus gr. 6. 50' 40". inuentus.

Differentia 43. 9. 20. sin. op. 72950

Aggregatū 56. 50. 40. sin. op. 54691

Relictum ē subtractione compl. 18259

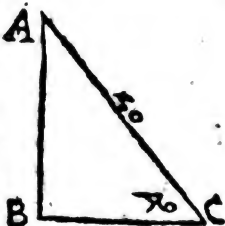
Eius dimidium 9129

Cui addenda est 0 propter figuram 5
non ita dudum abiectam, & fiet nume-
rus 91290, qui est tangens lateris quasi
si AB; ideoque hoc latus erit fere gr.
42. 23'. 34".

EXEMPLA

Exemplum tertium.

Denique, in triangulo rectilineo
rectang. ABC , detur hypotenusæ AC
hexap. 50, cum angulo C gr. 40 : &
ex his quaratur la-
tus AB ei angulo
oppositum. Per 1,
vel 2, probl. trian-
gulorum rectil. ut
sinus totus ad hypot.



AC 50, ita sinus anguli C ad latus
quæsitum AB . Quoniam vero se-
cundus terminus huius analogie
non est sinus rectus, & quia etiam
nimis parvus est, adiçantur 000
ad partem dextram huius numeri
50, provenietque numerus 50000,
cui in canone sinuum respondent gr.
30. Sic ergo stabit exemplum.

PROSTHAPHÆR.

Angulus C gr. 40.

Arc. inuent. gr. 30

Differentia 10. sin. comp. 98481

Aggregatum 70. sin. comp. 34202

Relictum è subtractione 64279

Eius dimidium 32139

Ex hoc autem numero inuento 32139, tres ultima figura 139 abij-
ciantur, & restabunt 32 hexapo-
des pro latere quasito AB, vel ma-
gis ad unguem $32 \frac{139}{1000}$: Nam quum
una figura abijcitur, sumitur pars
decima numeri; cum dua, centesi-
ma; cum tres, millesima, &c. ita
ut illa figura abiecta sint partes de-
nominata à numero 10, vel 100, vel
1000, &c.

REGVLA SECVNDV PROSTHAPHÆRESEOS.

Cum sinus totus in secundo,
vel tertio loco analogiæ vel re-
gulæ proport. ponitur, transla-
tio adhibenda est, ut ille primū

EXEMPLA

locum occupet; quæ translatio debet fieri secundum duo præcepta sequentia.

1. Si quilibet numerus in primo analogiæ loco reperiatur sinu toto maior, quæratur in canone secantium arcus huic numero, tanquam secanti, respondens, huiusque cõplementũ ponatur in loco sinus totius transponendo hunc in primum regulę locũ: Postea fiat prosthaphæresis vt traditum est in regula præcedente.

2. Si numerus sinu toto minor primum analogiæ locum occupet, addatur huic, ziphra vna aut plures, donec de canone secantium arcus illi congruens extrahi possit; & complementum eius ponatur in loco sinus totius, trāspanendo hũc in primũ analogiæ locum: postea fiat quoque prosthaphæresis vt traditum

PROSTHAPHÆR.

ditū est in 1. regula : qua peracta apponātur ad quart. numerum inuentum tot ziphræ quot antea numero sinu toto minori addebantur : habita tamen ratione eorum quæ notata sunt in prima regula. Nam aliquando sunt addendæ iuxta hanc secundam regulam, & subtrahendæ iuxta primam, quæ omnia manifesta reddentur exemplis sequentibus.

Exemplum casus prioris.

*In triangulo
sphaerico rect.*

ABC, detur

hypot. AC gr.

56, cum angulo

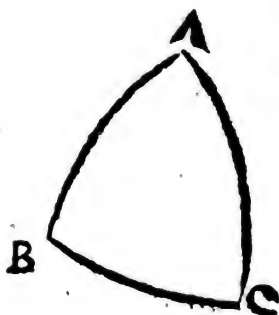
obl. A grad.

55: Et ex his

inueniatur, re-

liquus angulus

obl. C. Iuxta 2 analogiam



E X E M P L A

probl. 3. triangulorum spheric. ut
 142815 tangens compl. anguli dati
 A ad sinū cōpl. hypot. AC , ita sinus
 totus ad tangentem compl. anguli
 quaesiti C . Quoniam vero primus
 terminus huius analogia, sinu toto
 maior est, quaratur in canone secan-
 tium arcus illi numero 142815
 respondens, reperieturque arcus 45
 gr. $33' . 23''$. cuius complementum
 (nempe grad. $44 . 26' . 37''$) ponē-
 dum est in loco sinus totius, hunc
 transponendo in primum locum
 regula proportionum; Et stabit
 exemplum ut hic apparet.

Compl. $44 \text{ gr. } 26' . 37''$. arc. inuenti.
 Cōpl. hyp. 247 .

Differētia 20.	26.37 sin. cōp.	93702
Aggregatū 68.	26.37 sin. cōp.	36741
Relictum ē subtractione		56961
Dimidiū, nēpe tang. cōp. ang. C .		28480
Idcoq; hic angulus C erit		gr. $74 . 6' . 11''$.

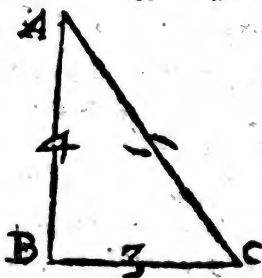
Exemplum casus posterioris.

In triangulo rectil. rectangulo

PROSTHAPHÆR.

ABC, detur hypot. *AC* hexap. 5.
cum latere *AB* 4: & ex his qua-
ratur angulus *C*.

Quia in omni
triangulo recti-
lineo latera qua-
vis duo eandem
rationem habēt,



quam sinus angulorum illis oppo-
sitorū; ut hypot. *AC* 5 ad sinum to-
tum, ita latus *AB* 4 ad sinum an-
guli *C*. Quum autem primus ter-
minus huius analogia sinus toto mi-
nor est, addantur huic 00000, ve-
nietque numerus 50000, cui in ca-
none secantium respondet arcus 78
gr. 27'. 55'', cuius complementum
est 11 gr. 32'. 5''. Præterea cum ter-
tius numerus 4 nimis parvus sit,
iuxta primam regulam, huic ad-
dantur 0000, venietque 40000, cui
respondet arcus gr. 23. 34'. 40''; ac
proinde sic stabit exemplum.

EXEMPLA

Arcus g. 23 34'.40".

Inuent. g. 11 32. 5

Differenti. 12. 2.35 sin. cōp. 97800

Aggregat. 35. 6.45 sin. cōp. 81802

Relictum è subtractione 15998

Dimidium, 7999

Cui addenda est 0, & fiet num. 79990

qui est sinus anguli quæsitæ C; idcirco hæc erit 53 gr. 7'.14".

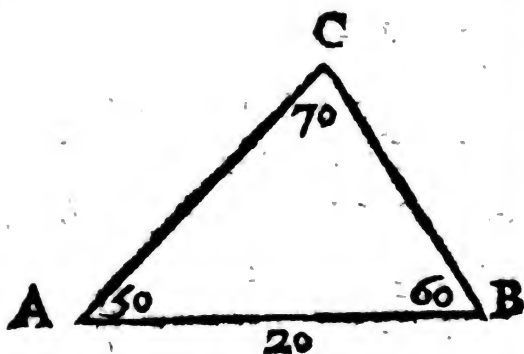
TERTIA REGULA PROSTHAPHÆRESEOS.

Quum sinus totus nullibi in regula proportionum reperitur, tunc duplex prosthaphæresis facienda est. Primum igitur per secundam regulam fiat, ut primus numerus analogiæ ad sinum totum, ita secundus ad aliud. Deinde per regulam primam fiat, ut sinus totus ad numerum inuentum, ita tertius numerus ad aliud; producceturque numerus quæsitus.

PROSTHAPHÆR.

Exemplum primum.

In triangulo rectilineo ABC , detur latus AB hexap. 20, cum omnibus angulis, nempe A gr. 50, B gr. 60, & C gr. 70. Et ex his queratur la-



tus BC angulo A oppositum. Vt sinus anguli C ad latus AB , ita sinus anguli A ad latus quæsitum BC ; in qua analogia sinus totus non reperitur, itaque utendum est duplici prosthaph. Primum igitur per secundam regulam fiat, ut primus numerus huius analogia ad sinum so-

E X E M P L A

tum, ita secundus ad aliud; reperiaturque numerus 21280, ut apparet in operatione sequente.

Sinus anguli C est 93969, cui addenda est 0, & veniet secans 939690, cuius arcus est gr. 83. 53'. 28". & compl. eius 6 g. 6'. 32". atq; hic est unus ex arcibus requisitis alter arcus posteriori numero 20 debitus est gradus 11. 32'. 12". Quo circa operatio prosthaphareseos erit ut hic vides.

Arc. gr. 11. 32'. 12".

Inn. gr. 6. 6. 32.

Differ. 5. 25. 40. sin. cōp. 99551

Aggreg. 17. 38. 44. sin. cōp. 95295

Relictum è subtractione 4256

Eius dimidium 2128

Ideoq; prior num. quæsit. erit 21280

Iam per regulam primam fiat ut sinus totus ad nunc numerum inuentum 21280, ita sinus anguli A ad aliud; reperienturque fere hexapo-

PROSTHAPHÆR.

des $16 \frac{1}{10}$, pro latere quæsito BC, ut
hic apparet.

Ang. A g. 50.

Arc. in g. $1217'11''$.

Different. $37.42.49$. sin. comp. 79108

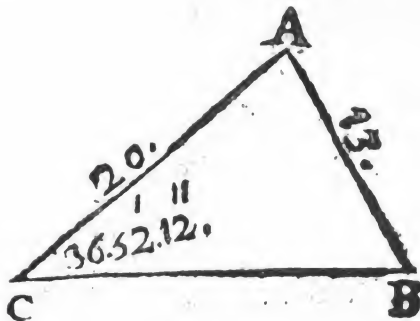
Az. reg. $62.17.11$. sin. comp. 46505

Relictum è subtractione. 32603

Dimidium, qui est num. quæsiti. 16301

Exemplum secundum.

In triangulo rectilineo ABC, den-
sur duo latera AB, AC, nempe AB



ped. 13, & AC ped. 20, cum angulo
C gr. $36.52'.12''$. Et ex his quæra-
tur angulus acutus B lateri AC op-

V iiiij

E X E M P L A

positus. Vt latus AB ad sinum anguli C huius lateri oppositi, ita latus AC ad sinum anguli quesiti B : In hac autem analogia sinus totus non reperitur; Itaque duplex prosthapharesis facienda est. Primum igitur per regulam secundam fiat, ut primus numerus 13 ad sinum totum, ita secundus ad aliud; reperieturque numerus 46139 : Nam additis 0000 primo numero 13 , fiet numerus 130000 , cui respondet in Canone secantium arcus $gr. 39. 42'. 54''$, cuius complementum est arcus $gr. 50. 17'. 6''$. quocirca prosthapharesis erit ut sequitur.

Arc. $gr. 50. 17' 6''$.

Ang. $C. 36 52. 12$.

Different. $13. 24. 54$. sin. comp. 97272

Aggregat. $87. 9. 18$. sin. comp. 4994

Relictum \hat{e} subtractione 92278

Dimid. qui est quas. num. prior 46139

Iam fiat per primam regulam,

PROSTHAPHÆR.

ut sinus totus ad hunc numerum
inuentum 46139, ita latus AC 20
ad aliud; reperieturque 92310 pro
sinu anguli quæsit B; ideoque hic
angulus erit gr. 67. 22'. 49'. arcus
respond. numero 46139 tanquam
sinui est gr. 27. 28'. 37'. Et arcus
congruens lateri AC (additis ei 000)
est gr. 11. 32'. 12". Quocirca pro-
sthaph. erit ut hic vides,

Arcus gr. 27. 28'. 37".

Inu. gr. 11. 32. 12.

Different. 15. 56. 25. sin. cōp. 96162

Aggregat. 39. 0. 49. sin. cōp. 77700

Relictum è subtractione 18462

Eius dimid. cui adiecta est 0. 92310

Paucis igitur perstrinximus
amice lector praxim calculi
triangulorū per prosthaphære-
sin. Nicolaus Raymarus, Cla-
uius, Pitiscus, & Longomonta-
nus fecerunt demonstrationes
huius prosthaphæres. idcirco

EXEMPLA

recurres ad scripta authorum illorum, si dictas demonstrationes videre cupias : ac si conferas quæ hic docuimus, quod ad hanc prosthaphæres. attinet, cum ijs quæ auctores illi scripserunt, spero te methodum nostram breviorum agniturum, & ad praxim aptiorem quam quæ illi docuerunt, cum plurimas regulas ac distinctiones adferant, quibus non opus est, si stetur tribus regulis generalibus supra traditis.

Quod si velis vti dicta prosthaph. in quolibet negotio in quo regula triū occurrit, id etiā efficere poteris. Certū est quidē sepe numero operationē futuram longiorem, quam si via solita procederetur, vt apparet exemplo sequenti.

Si quis emerit 25 $\frac{1}{2}$ vlnas panni, qua 204 libris consent, quaritur

PROSTHAPHÆR.

*quanti constabunt adhuc 15 vlna
eiusdem panni.*

Adiectis 0000 numero primo
25 $\frac{1}{2}$, fiet sec. 255000, cui respō-
det arcus compl. gr. 23. 5'. 20".
sed adiectis 00 numero secun-
do 204, fiet sinus 20400, cui de-
betur arcus gr. 11. 46'. 15". Ita-
que prima prosthaphæresis
erit, vt sequitur.

Arc. 23. g. 5'. 20".

Inu. 11. g. 46'. 15".

Diff. 11. 19. 5. sin. cōpl. 98055

Agg. 34. 51. 35. sin. cōpl. 82057

Relictum è subtractione 15999

Diuid. cui adiectæ sunt 00 799950

Huic numero inuēto 799950
respondet arcus (abiecta vltima
figura 0) gr. 53. 7'. 32". & ter-
tio numero regulæ triū 15 de-
betur (adiectis ei 000) arcus gr.
8. 37'. 37".. quocirca secunda
prosthaph. erit vt hic vides.

EXEMPLA

Arcus gr. 53. 7'. 32".

Inuēti gr. 8. 37 37.

Differēt. 44. 29. 55. sin. cōpl. 71328

Aggregat. 61. 45. 9. sin. cōpl. 47328

Relictum ē subtractione 24000

Eius dimidium 12000

Ergo sublatis vltimis 00 huius semissis 12000, restabunt 120 pro quarto numero quęsito, id est, cum $25\frac{1}{2}$ vlnæ panni constiterint 104 libris, 15 vlnas eiusdem panni constituras 120 libris.

FINIS.

Vt autem facilius reperiri possit quodlibet problema quoties opus erit, hic omnium problematum præcedentium indicem addemus, qui quidem index singulorum problematum numerum designabit.

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ET PRAXIVM
triangulorum.

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rectangulo*

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3. *Hypotenuſa, & uterque angulus
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ribus.*
4. *Duo anguli acuti, & alterutrum
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*In triangulo rectilineo obli-
quangulo*

Inveniuntur

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-

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9. Duo anguli, *Et* unum latus; ex reliquis duobus lateribus, *Et* reliquo angulo uni eorum opposito.
10. Omnes anguli, ex omnibus lateribus.

In triangulo sphaerico re-
ctangulo

Inuenitur hypotenusa

7. Ex alterutro laterum, *Et* angulo ei opposito.
12. Ex alterutro laterum, *Et* angulo ei adiacente.
14. Ex duobus angulis obliquis.
15. Ex duobus lateribus reliquis.

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3. *Ex hypotenusa, & altero angulo obl.*

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17. *Latera, ex tribus angulis.*

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18. *Anguli; ex tribus lateribus.*
19. *Duo anguli, & latus; ex lateribus reliquis, & angulo ab ipsis comprehenso.*
20. *Duo latera, & angulus; ex duobus angulis, & latere illis adiacente.*
21. *Latera duo, & angulus; ex duobus angulis, & latere uni eorum opposito.*
22. *Anguli duo, & latus; ex reliquis lateribus, & angulo uni eorum opposito.*

EXTRACT DV PRIVILEGE DV ROY.

P*Ar privilege du Roy, il est permis à D. HENRION, Professeur ès Mathemat. de faire r'imprimer toutes ses œuvres, qui sont les Elements d'Euclide, & de Theodose, les memoires Mathematiques,*

ques, l'usage des globes, & du compas de proportion, les triangles spheriques, la Cosmographie, & le Canon manuel de Pitiscus: Soit qu'il les vueille faire r'imprimer conioinctement ou separément; Et de nouveau, un liure intitulé, Collection ou recueil de diuers traictez Mathematiques, Et ce iusques au terme de dix ans, à compter du iour que chacun de sesdicts liures sera acheué d'imprimer en vertu des presentes; pendant lequel temps, defences sont faites à tous Imprimeurs, Libraires, Et autres personnes, de quelque estat, qualité, ou condition qu'ils soient, d'imprimer, alterer, traduire, ny extraire aucune chose des œuvres dudit HENRION, d'achepter, eschanger, vendre, ny distribuer aucuns de sesdicts liures, sinon de ceux qu'il aura fait imprimer, sur peine de six mille liures d'amende, Et

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en pareille amande que s'il l'auoit
imprimé, ou faict imprimer. Vou-
lant en outre sa Majesté, qu'en ap-
posant au commencement ou à la
fin desdits liures un extrait des pre-
sentes, elles soient tenuës pour bien
notifiées & signifiées, nonobstant
quelconque lettre au contraire: Car
tel est le plaisir de sa Majesté. Don-
né à Paris, le 11. iour de Mars, l'an
de grace 1621. & de nostre regne le
vngziesme.

Par le Roy en son Conseil,
RENOUARD.

Les Estats generaux des Pro-
uinces vnies du pays bas, ont
fait & octroyé mesme priuilege
audit HENRION, par acte du 19.
iour du mois de May en ladite
année 1621.

Signé N.V. BOVCHORST Vt.

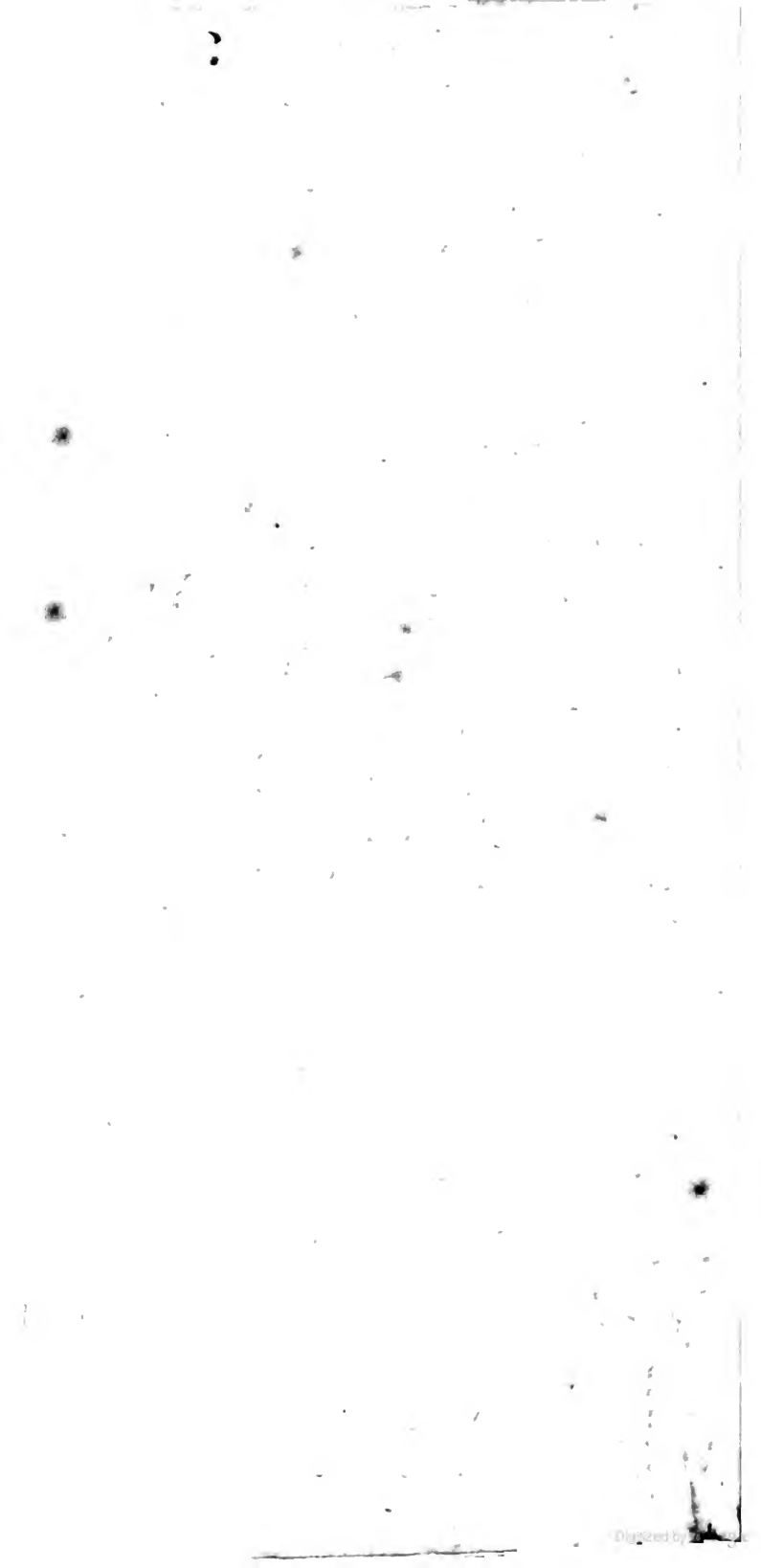
Et plus bas par l'Ordonnance
desdits Seigneurs Estats Gene-
raux.

C. A E R S E N.

*Absoluta est impressio huius Cano-
nis 15. May 1623.*







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